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# FIVE-YEAR REVIEW REPORT

## Second Five-Year Review Report
## for the Barkhamsted-New Hartford Landfill
## Barkhamsted-New Hartford, Connecticut

**September 2008**

**Prepared By:**

**United States Environmental Protection Agency**
**Region 1**

**Boston, Massachusetts**

Barkhamsted
8.3

Approved by: Date: 9/19/08

James T. Owens, III
Director, Office of Site Remediation and Restoration

# TABLE OF CONTENTS

FIGURES

TABLES

(Tables are located at end of document unless otherwise noted.)

APPENDICIES

A. Landfill Inspection Checklist

B. Applicable or Relevant and Appropriate Requirements

C. Potentially Complete Exposure Pathways

D. Vapor Intrusion Pathway Summary Page

E. Graphs of Groundwater Concentration Trends for Select VOCs, SVOCs and Arsenic

## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ARARs | Applicable or Relevant and Appropriate Requirements |
| bgs | Below ground surface |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act |
| CFR | Code of Federal Regulations |
| COCs | Contaminants of Concern |
| COPC | Contaminants of Potential Concern |
| CTDEP | Connecticut Department of Environmental Protection |
| EPA | United States Environmental Protection Agency |
| ELUR | Environmental Land Use Restriction |
| FS | Feasibility Study |
| FSP | Field Sampling Plan |
| MCLs | Maximum Contaminant Levels |
| MCLG | Maximum Contaminant Level Goals |
| MDL | Method Detection Limit |
| MNA | Monitored Natural Attenuation |
| NPL | National Priorities List |
| NTCRA | Non-Time Critical Removal Action |
| OHM | Oil and/or Hazardous Material |
| OMM | Operations and Maintenance Manual |
| OU | Operable Unit |
| ppm | Parts per million |
| ppb | Parts per billion |
| POTW | Publicly Owned Treatment Works |
| PRP | Potentially Responsible Party |
| PQL | Practical Quantitation Limit |
| PSD | Performing Settling Defendant |
| QAPP | Quality Assurance Project Plan |
| RA | Remedial Action |
| RAO | Response Action Objectives |
| RAP | Remedial Action Plan |
| RCRA | Resource Conservation and Recovery Act |
| RI | Remedial Investigation |
| ROD | Record of Decision |
| RPM | Remedial Project Manager |
| RRDD | Regional Refuse Disposal District No.1 |
| SVOCs | Semivolatile organic compounds |
| VOCs | Volatile Organic Compounds |

# EXECUTIVE SUMMARY

The remedy selected to address contamination at the Barkhamsted-New Hartford Landfill site (hereinafter referred to as the Site), located in the town of Barkhamsted, Litchfield County, Connecticut was Monitored Natural Attenuation (MNA) of Site groundwater (deemed as the only medium requiring further remediation). This landfill was capped as part of a Non-Time Critical Removal Action (NTCRA) lead by the Connecticut Department of Environmental Protection (CTDEP) to address source materials and principal-threat wastes. The CTDEP approved the landfill closure in January 1998. The trigger for this Five-Year Review was the last Five-Year Review in September 2003. This statutory review is required since hazardous waste remains at the Site above levels that allow for unlimited use and unrestricted exposure.

The Record of Decision (ROD) indicating that MNA was the selected remedy was approved on September 28, 2001 (EPA, 2001b). Initially, the ROD required quarterly sampling of groundwater monitoring wells for two years. This was conducted at the site to coincide with the monitoring requirements set forth in Landfill Operation and Maintenance Manual (O'Brien and Gere, October 2001). Since 2005, semi-annual sampling of groundwater monitoring wells have been conducted.

The assessment of the five-year review found that the remedy is functioning as designed. The immediate threats have been addressed, and the groundwater remedy is expected to be protective of human health and the environment upon completion, when groundwater cleanup goals are achieved through MNA, which was estimated in the Feasibility Study (FS) to occur in about 16 years (O'Brien & Gere Engineers, Inc., 2001a). The MNA remedy also appears ahead of the model prediction, so the remedial goal may be achieved sooner. In the interim, exposure pathways that could result in unacceptable risks are being controlled.

# FIVE-YEAR REVIEW SUMMARY FORM

| | | |
|---|---|---|
| **SITE IDENTIFICATION** | | |
| **Site Name:** Barkhamsted-New Hartford Landfill | | |
| **EPA CERCLIS ID:** CTD980732333 | | |
| **Region** 1 | **State:** CT | **City/County:** Barkhamsted, CT |
| **SITE STATUS** | | |
| **NPL Status:** **X** Final Deleted Other (Specify) | | |
| **Remediation Status** (choose all that apply): Under Construction **X** Operating Complete | | |
| **Multiple OUs?** Yes **X** No | | **Construction Complete Date:** 9/28/2001 |
| **Has site been put into reuse?** Yes **X** No | | |
| **REVIEW STATUS** | | |
| **Lead Agency:** **X** EPA State Tribe Other Federal Agency | | |
| **Authors Names:** Byron Mah | | |
| **Authors' Titles/Affiliation:** Byron Mah, Remedial Project Manager, U.S. EPA | | |
| **Review Period:** 6/30/03 to 6/30/08 | | |
| **Date(s) of Site Inspection:** 6/19/08, 6/25/08, 8/6/08 | | |
| **Type of Review:**<br>**X** Post-SARA Pre-SARA NPL-Removal Only<br>Non-NPL Remedial Action Site NPL State/Tribe Lead Regional Discretion | | |
| **Review Number:** 1 (first) **X 2 (second)** 3 (third) Other (specify)_____ | | |
| **Triggering Action:**<br>**X** Actual RA Onsite Construction at OU# 1 (NTCRA) Actual RA Start at OU #_____<br>Construction Completion Previous Five-Year Review Report | | |
| **Triggering Action date (from WasteLAN):** 9/22/03 | | |
| **Due Date (five years after triggering action date):** 9/23/08 | | |

## FIVE-YEAR REVIEW SUMMARY FORM, CONT'D.

**Issues:**

There were no issues that affect the protectiveness of the remedy. As a side note, however, during the annual inspection of the landfill by the EPA in the summer of 2005 erosion was discovered at one of the surface water drainage downchutes. The downchute is located on the west side of the landfill. Erosion had occurred at a point starting approximately 180 feet from the bottom edge of the landfill just below a side slope diversion ditch. The erosion had resulted in the partial sinking of the gabions that lined the downchute and the accumulation of erosion material at the base of the landfill. The downchute was repaired. This event did not impact the cap liner.

**Recommendations and Follow-up Actions:**

There were no issues affecting the protectiveness of the remedy requiring follow-up actions. Regarding the previous surface erosion, a recommendation was made to repair the downchute before winter. The downchute was repaired in the fall of 2005 and appears to be functioning appropriately.

Continue to review all downchutes for erosion during annual inspections. Increase frequency of inspections if downchutes appear suspect for erosion.

**Protectiveness Statement(s):**

As a result of previous actions at the Site, groundwater is the only medium requiring further remedial action for which Monitored Natural Attenuation (MNA) was the selected remedy. The assessment of the five-year review found that the remedy is functioning as designed. The immediate threats have been addressed, and the groundwater remedy is expected to be protective of human health and the environment upon completion, when groundwater cleanup goals are achieved through MNA, which was estimated in the Feasibility Study (FS) to occur in about 16 years (O'Brien & Gere Engineers, Inc., 2001a). The MNA remedy also appears ahead of the model prediction, so the remedial goal may be achieved sooner. In the interim, exposure pathways that could result in unacceptable risks are being controlled.

**Long-Term Protectiveness:**

Long-term protectiveness of the remedial action will be verified by continuing the MNA groundwater sampling program to monitor and evaluate the contaminant plume downgradient of the landfill and the potential migration of the plume. Current data indicate that the plume appears stable or a steady state condition and is shrinking in size towards the landfill (source area). Since the Remedial Action at all OUs are protective, the Site is protective of human health and the environment.

## Other Comments:

There are no other comments for this 5-Year Review.

## 1.0 INTRODUCTION

The purpose of this five-year review is to determine whether the remedy for the Barkhamsted-New Hartford Landfill Superfund Site (Site) is protective of human health and the environment. The methods, findings and conclusions of this review are documented in this five-year review report. In addition, this report identifies issues encountered during preparation of this five-year review, along with recommendations to address such issues.

The United States Environmental Protection Agency (EPA) must implement five-year reviews pursuant to Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (Section 121) and the NCP. CERCLA Section 121(c) states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section 9604 [104] or 9606 [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The Agency reported this requirement further in the NCP; part 300.430(f)(4)(ii) of the Code of Federal Regulations (CFR) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

This is the second five-year review for the Site. The triggering action for this review is the last Five-Year review in September 2003 following the Connecticut Department of Environmental Protection (CTDEP) approval of the non-time critical removal date (NTCRA) in 1998, which included capping of the landfill, along with implementation of a leachate management system and institutional controls. The Five-Year Review is required due to the fact that hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure. This Five-Year Review has been prepared following guidance provided by EPA (2001a).

The selected remedial action to reduce impact of designated Contaminants of Concern (COCs) to groundwater (deemed as the only medium requiring remediation) is Monitored Natural Attenuation (MNA) of Site groundwater. LFR Inc. (LFR) was selected as the contractor on behalf of the Potentially Responsible Party (PRP) in February 2003. The Regional Refuse Disposal District No.1 (RRDD) acting as the Performing Party conducted the initial quarterly groundwater sampling event, pursuant to the ROD, in April and May 2003 program. In 2005 after 2 years of quarterly sampling the sampling frequency changed to semi-annual.

## 2.0 SITE CHRONOLOGY

The chronology of the Site is addressed in Table 1, which includes significant events and dates as one operating unit (OU).

**TABLE 1: CHRONOLOGY OF SITE EVENTS**

| Date (Month/year) | Environmental Issue/Event/milestone |
|---|---|
| September 1970 | Regional Refuse Disposal District No. 1 (RRDD) was formed. |
| September 1972 | RRDD received CTDEP soil waste permit #005-2L. The RRDD purchased the Barkhamsted property from the Town of Barkhamsted. |
| 1970s | Operation of chemical pit that received oily sludge with metal grindings and degreasers. |
| January 1974 | Modification to the RRDD solid waste permit was issued. |
| April 1974 | The landfill became operational. |
| 1974-1979 | CTDEP solid waste reports document lack of daily cover material; additional issues include ponding of water on landfill surface and encroachment of brush and bulky waste onto 50-foot buffer zone. |
| April 1974- August 1988 | Barkhamsted landfill Site was used for the disposal of solid waste. |
| 1980 | CTDEP inspection of the Site. |
| 1981 | EPA conducted a preliminary assessment for the Site. |
| March 1981 | CTDEP requests RRDD to remove hazardous waste from the facility. |
| July 1981 | CTDEP formerly approved disposal of metal grinding waste at Site. |
| 1983 | Two complaints received concerning the presence of a large number of drums; CTDEP requests that 25 drums containing suspect motor oil be re-located to a paved area on-Site. |
| November 1983 | Thirty drums discovered near the scrap metal area (north of toe of landfill and NW of garage). |
| December 16, 1983 | A modification to the landfill operating permit was issued. |
| 1984 | Requirement for a new metals grindings cell. Metal grindings were stored on Site in 55-gallon drums. |

| | |
|---|---|
| September 1986 | CTDEP acknowledges handling of waste oil and batteries for recycling. |
| March-1987 | NUS Corporation conducts site inspection, on behalf of EPA –Site receives hazard ranking score (HRS) of 52.00, later lowered to 38.05, due to low population density and fact that area served by public water supply. |
| November – December 1988 | Disposal of solid waste at the Site because CRRA mid-Connecticut Waste to Energy Plant was inoperable. |
| August 1988 – October 1993 | Disposal of bulky and non-processible waste only. |
| 1988 | CTDEP document states that one half of the barrels received at the Site contained unspecified amounts of chlorinated hydrocarbons or methyl ethyl ketone. |
| October 5, 1989 | Barkhamsted Site listed on NPL. |
| February 1990 | Minor amendment was granted to the RRDD solid waste permit allowing landfill to accept dewatered sludge from Winsted's publicly owned treatment works (POTW). |
| 1990 | CTDEP Administrative order to investigate waste materials; determine extent of impact and potential impact to soil, surface water and groundwater |
| October 4, 1991 | CERCLA Administrative Order to Conduct Remedial Investigation/Feasibility Study (RI/FS) (Docket No. I-91-1128). |
| Dec 1991-Jan 1992 | Limited Field Investigation (LFI) conducted by O'Brien & Gere Engineers, Inc. |
| December 1991 | Scope of Study completed by Fuss & O'Neill per CTDEP Administrative Order No. 666. |
| November 1992 | Landfill closure implemented. CTDEP revise permit # SW-0005-2L to address water quality monitoring plan. |
| October 1993 | Facility ceases acceptance of waste for on-Site disposal. |
| April 1994 | Engineering Evaluation/Cost Analysis (EE/CA) addressing NTCRA. |
| September 26, 1994 | EPA approves NTCRA; EPA and CTDEP enter into Consent Order requiring RRDD to design and implement NTCRA. |
| October 1994 | Landfill cover (2-ft thick) installed. |
| January 1995 | CTDEP approves landfill closure. |
| February 1996 | Remedial Investigation (RI) by O'Brien & Gere Engineers, Inc. (1996). |
| September 1996 | Draft Remedial Action Plan (RAP). |
| 1998 | NTCRA completed; implementation of leachate collection system; capping of landfill and Site restoration. |
| June 2001 | Feasibility Study Report, O'Brien & Gere Engineers, Inc. (2001a). |
| September 28, 2001 | EPA Record of Decision (ROD) (EPA, 2001b). |
| November 19, 2002 | Environmental Land Use Restriction (ELUR) public notice; 30-day comment period from 11/19/02 to 12/19/02. |
| April to June 2003 | Sampling of Site groundwater monitoring wells, residential potable water wells, surface water and sediment sampling per the ROD begins. |
| July 2003 | Drilling to install additional monitoring wells MW-120S and MW-120B. |

| | |
|---|---|
| August 23, 2003 | The on-Site ELUR, dated July 24, 2003, was recorded at the Barkhamsted Land Records in Volume 124, Page 140. |
| September 2003 | First 5-Year Review. |
| January 22, 2004 | The off-Site Town Garage ELUR, dated December 22, 2003, was recorded in Volume 126, Page 347. The off-Site MDC ELUR, dated December 22, 2003, was recorded in Volume 126, Page 357. |
| February 24, 2004 | The off-Site ELUR for the Morris property dated January 4, 2004 was recorded at the Barkhamsted Land Record in Volume 126, Page 689. |
| August 2005 | EPA Site inspection discovers a downchute failure in one of the downchuts. |
| October to November 2005 | Downchute repair conducted and completed. |
| April 19, 2008 | Public notice that a Five-Year Review is to be conducted. |
| September 2008 | Second Five-Year Review |

## 3.0 BACKGROUND

### 3.1 Physical Characteristics

The Site is comprised of a 97.8-acre parcel of land located on the northern slope of a hill within the Farmington River Valley, located in the north central portion of Connecticut. The Site is primarily used as a transfer station and recycling center consisting of 97.84 acres located in the Towns of Barkhamsted and New Hartford, Litchfield County, Connecticut (a Site Location Map is provide as Figure 1). The capped landfill itself is approximately 13 acres. The Site is abutted to northeast by the Barkhamsted Town Garage facility and in other directions by both developed and undeveloped private properties. This includes residential properties to the east and southeast that use private wells for potable water. The town center of New Hartford lies within a one-mile radius to the south-southeast of the Site. Other areas of the Site property include an active transfer station, recycling area, maintenance and office building, and dense woods comprised primarily of hardwood and conifer trees. A Site Location Map is provided as Figure 1 and Figure 2 presents the Site Plan and Sampling Locations.

### 3.2 Land and Resource Use

The Site was formerly used as a solid waste landfill that received oily sludge with metal grindings and degreasers. Waste oil and batteries were handled for recycling. A NTCRA was initiated in 1992 to cap the landfill, which stopped accepting waste for on-Site disposal in October 1993. In January 1998, the CTDEP approved the landfill closure.

The current use of the Site includes an active waste transfer station, recycling area, with a maintenance and office building. The capped landfill is fenced. The current use for the surrounding area is residential, commercial and recreational. The Metropolitan District

Commission (MDC) owns undeveloped land along the Farmington River, which is used for recreational purposes, including fishing, swimming and boating.

One surface water body, designated as the "Un-named Brook", originates south of the Site and flows along the western portion of the landfill area. Beyond the landfill, the brook proceeds to the northeast and flows under Route 44, where it enters the Farmington River floodplain and a series of small beaver ponds. The brook eventually flows into the Farmington River, located approximately 0.25 miles southeast of the Site. The Farmington River is a Class B River for recreational fishing and boating.

The groundwater aquifer underlying the Site is currently not used as a drinking water source, but nearby commercial and residential areas use off-Site wells for potable water. These off-Site potable wells are not within the zone of Site-related groundwater plumes. Groundwater at the Site is estimated to flow to the northeast. Downgradient of the Site, groundwater flow is more easterly toward the Farmington River. Groundwater contour maps for April 2008 for the overburden and shallow bedrock are included as Figures 3 and 4, respectively. Due to the affected groundwater at the Site an Environmental Land Use Restriction (ELUR) was placed on the Site to document the groundwater contamination, which was recorded at the Barkhamsted Land Record on February 24, 2004. In addition, the ELUR noted that groundwater is not to be used for drinking or other purposes, that there is to be no building on the cap or residential use immediately downgradient, that there is no disturbance to the cap and it is to be properly maintained to prevent exposure.

## 3.3 History of Contamination

The Barkhamsted landfill was used for the disposal of solid waste between April 1974 and August 1988. The property is owned and operated by the Regional Refuse Disposal District No. 1 (RRDD). RRDD is a corporate entity that was established on May 25, 1970 upon the adoption of its charter by the Towns of Barkhamsted, Colebrook, New Hartford and Winchester. On September 21, 1972, RRDD received a permit from the State of CTDEP approving the establishment of a solid waste disposal area. The Site began operating as a landfill in 1974.

The Site was used for the disposal of solid waste between April 1974 and August 1988. After August 1988, the landfill was used only for the disposal of bulky and non-processible waste with the exception of a period during November and December 1988 when the Connecticut Resources Recovery Authority (CRRA) Mid-Connecticut Waste to Energy Plant was inoperable. In 1998 a landfill cap and leachate collection system, surrounded by a fence, were constructed pursuant to a NTCRA under CERCLA authority. Table 1 provides a chronology of major environmental issues, events and milestones at the Site, as documented in the Remedial Investigation (RI) report (O'Brien & Gere Engineers, Inc., 1996) and Feasibility Study (FS) report (O'Brien & Gere Engineers, Inc., 2001a).

Historical wastes accepted at the landfill included the following:

- Municipal solid waste;

- Industrial wastes, including metal grinding waste, oily sludge with metal grinding and degreasers; barrels containing unspecified amounts of chlorinated hydrocarbons and methyl-ethyl-ketone (MEK) and keratin; and

- Dry metal grinding waste.

### 3.4 Initial Response Actions

In 1981, EPA conducted a Site inspection, based on previous findings of the CTDEP. EPA's 1981 inspection included collection and analysis of Site groundwater samples. Laboratory analytical results of Site groundwater indicated concentrations of xylenes, toluene, 1,1-dichloroethane (1,1-DCA), 4-methyl-2-pentatnone and vinyl chloride (VC). EPA inspection report also indicated the presence of metals at the Site (including cadmium, chromium, copper, lead, manganese, nickel and zinc) attributed to the historical disposal of oily metal grinding sludges. Additionally, during U.S. EPA's inspection, leachate was observed to be discharging from the landfill into the Un-named Brook. Pursuant to Section 105(8)(b) of CERCLA, the Site was proposed for inclusion on the National Priorities List (NPL) on June 21, 1988 and was subsequently listed on the NPL on October 5, 1989. Administrative orders were issued by CTDEP (1990) and EPA (1991) to investigate waste materials and disposal activities on the Site, along with the extent of impact to soil, groundwater and surface water.

In 1994, a NTCRA was implemented at the Site, which included re-location of impacted soil and sediment to a paved portion of the Site, along with installation of a leachate collection system and landfill cap. The NTCRA was completed in 1998. A risk assessment was prepared prior to NTCRA implementation to assess post-NTCRA risks to human and ecological receptors. Groundwater was deemed as the only medium requiring remediation.

Subsurface investigations conducted from 1992 to 2000 are documented in the RI and FS reports. These investigations indicated the following:

- Soil sampling analytical results indicated concentrations of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides and polychlorinated biphenyls (PCBs). Table 1-1 of the FS Report (O'Brien & Gere Engineers, Inc., 2001a) identifies contaminants of potential concern (COPCs), including VOCs, SVOCs and inorganics. Soils containing constituents detected at concentrations exceeding applicable or relevant and appropriate criteria were addressed in the NTCRA.

- Surface water sampling and leachate seep sediment sampling results indicated concentrations of SVOCs, pesticides and PCBs. Sediments samples collected from hydrogeologically downgradient locations (to the landfill) and leachate seep sediment samples indicated concentrations of VOCs, SVOCs, metals, pesticides and PCBs.

Prior to the RI, 31 groundwater monitoring wells were installed at the Site. Twenty-two additional wells were installed during the RI. COCs based on groundwater investigations include 14 VOCs, 4 SVOCs and 4 inorganics. Groundwater sampling conducted since the RI have shown a decreasing trend in most contaminant concentrations.

## 3.5 Summary of Basis for Taking Action

Hazardous substances in concentrations above health based levels were identified during the RI/FS. The RI identified COCs that have been released at the Site in each media, which are identified below and also in Table 2. EPA completed a baseline human health risk assessment in February 1996 and updated in April 2000. Using EPA's risk assessment guidance, potential human health effects associated with exposure to COCs were estimated for various exposure scenarios. Calculated risks for some exposure scenarios fell outside EPA's acceptable range, which formed the basis for the response actions. An ecological risk assessment conducted within the same time period determined that it was not likely that the contaminants found at the Site would cause significant ecological impacts.

The COCs were selected from the constituents detected in groundwater based on the unacceptable risks that these contaminants present. Groundwater was the only medium that poses an unacceptable post-NCTRA risk to human health. Since COCs have migrated in overburden and bedrock groundwater, off-Site impacts are a concern, specifically to nearby potable water supplies. As documented in U.S. EPA's Record of Decision (ROD) (EPA, 2001b), the primary objective is restoration of Site groundwater by MNA, which has been designated as the final Site environmental remedy with an expected duration of approximately 16 years. Installation of additional groundwater monitoring wells occurred in July 2003 to fill in data gaps and assess the performance of the MNA.

The only medium that potentially poses an unacceptable post-NTCRA risk to the environment is sediment. Although the actual risk is uncertain, it is likely that decreased leachate, biodegradation of organic contaminants, and natural sedimentation will ameliorate these possible risks. Surface water and sediment sampling is to be conducted to assess this possible risk. Based on surface water sampling conducted in 2000 (subsequent to the NTCRA), there are no known constituents exceeding applicable criteria in surface water, as identified in the ecological risk assessment presented in the FS. Leachate seeps are expected to gradually diminish in discharge volume over time or dry up.

COCs for groundwater, as addressed in the ROD, include the following:

| | |
|---|---|
| Acetone | Manganese |
| Benzene | Toluene |
| 1,2-dichloroethane | 2-Butanone (MEK) |
| 1,2-dichloropropane | 4-methyl-2-pentanone |
| Chloroethane | 1,4-dichlorobenzene |

| | |
|---|---|
| Chloroform | Bis(2-ethyl hexyl) phthalate |
| Chloromethane | 2,4-dimethylphenol |
| Dibromochloromethane | 4-methylphenol |
| Methylene chloride | Arsenic |
| Trichloroethene (TCE) | Chromium (total) |
| Vinyl chloride (VC) | Lead |

A complete list of the COC and other compounds analyzed is included in Table 2.

## 4.0 REMEDIAL ACTIONS

The following sections discuss the initial plans, implementation history and current status of the remedy.

### 4.1 Remedy Selection and Remedial Action Objectives

The ROD for the Site was signed on September 28, 2001 (EPA, 2001b). Monitored Natural Attenuation (MNA) was selected as the remedial option to reduce groundwater impacts at the Site. The remedy at this Site is designed to protect human health and the environment by eliminating, reducing or controlling exposures to human and environmental receptors through monitored natural reductions in toxicity, engineering controls and institutional controls. More specifically, groundwater cleanup levels will be achieved through natural attenuation processes. Environmental land use restrictions would prohibit residential use of the Site, use of groundwater for drinking or any other purpose, and avoid disturbance of the landfill cap installed under the NTCRA. Environmental land use restrictions of down-gradient properties would prohibit the installation of any wells and use of groundwater for any purpose.

The primary goal of the selected remedy is to ensure that the area down-gradient of the landfill will no longer present an unacceptable risk to humans via groundwater and will be suitable for unrestricted use. Approximately 16 years are estimated as the amount of time necessary to achieve the goals consistent with residential use. The expected outcome of the site itself is to remain as a refuse / recycling / disposal facility, with restricted use of land and groundwater at the landfill itself, unrestricted use in all other areas.

Remedial action objectives (RAOs) were developed to aid in the development and screening of alternatives. These RAOs were developed to mitigate and prevent existing and future potential threats to human health and the environment. The following RAOs identified in the ROD were developed because of data collected during the RI and the alternatives evaluated in the FS (O'Brien & Gere Engineers, Inc., 2001a). These RAOs for the selected remedy for the Site are further broken into two categories: groundwater and sediment.

**Groundwater**

The RAOs for groundwater for human health are as follows:

- Prevent ingestion or dermal contact with groundwater having constituent concentrations exceeding EPA Safe Drinking Water Act non-zero MCLGs or Maximum Contaminant Levels (MCLs), or in their absence, the more stringent of an excess cancer risk of $1 \times 10^{-6}$ for each substance or a hazard quotient of 1 for each non-carcinogenic substance. (Please note that this RAO applies to all areas where the groundwater has been impacted by contamination from the landfill including areas beneath the landfill. For information on MCLGs please refer to NCP Section 300.403(e)(2)(i)B and Section 300.403(e)(2)(i) )

- Restore groundwater beyond the compliance boundary (limits of the landfill –See Figure 2) to MCLs or any more stringent CT Remediation Standards (background concentrations), or in their absence, the more stringent of an excess cancer risk of $1 \times 10^{-6}$ for each substance or a hazard quotient of 1 for each non-carcinogenic substance.

**Sediment**

The RAOs for sediment for environmental protection are as follows:

- Protect benthic invertebrates and mammals from ingesting contaminated prey from direct contact with, or ingestion of, sediment having constituent concentrations exceeding a hazard index of 1.

- Prevent releases of constituents from sediments that would result in surface water levels exceeding federal Ambient Water Quality Criteria, Connecticut Water Quality Standards, or in their absence, a hazard index of 1.

### 4.1.1 Source Control

The source control was addressed by the NTCRA, which included re-location of impacted soil and sediment to a paved portion of the Site, along with installation of a leachate collection system and landfill cap. During the performance of the NTCRA, an approximate 340-foot reach of the Un-named Brook was relocated on the west side of the landfill, with the former section of the brook being covered with soil. Moreover, sediments were excavated from an approximately 70-foot reach of the brook and placed beneath the cap during the NTCRA construction. The EPA has determined that there are no present contaminant sources at the Site and no additional actions are anticipated during implementation of the final cleanup remedy.

### 4.1.2 Management of Migration

The major components of the management of migration remedy selected in the ROD includes:

- Long-term monitoring of groundwater, surface water (including seeps), and sediment;
- Restoration of contaminated groundwater via natural attenuation;
- Environmental land use restrictions (ELURs);
- Public education program; and
- Five-year reviews.

## 4.2 Remedy Implementation

In 1992 landfill closure was implemented in accordance with the Landfill Closure Plan (Fuss & O'Neill, 1992). In January 1995 the CTDEP approves the landfill closure. In April 1997, the Remedial Action Plan for the NCTRA was prepared, which included (O'Brien & Gere Engineers, Inc., 1997):

- Relocation of impacted soil, sediment and refuse to within the limits of the area to be capped;
- Installation of a leachate collection system with a 15,000-gallon underground leachate holding tank;
- Capping of the landfill with a low-permeability capping system;
- Relocation of an the Un-named Brook;
- Vertical extension of groundwater monitoring wells located within the limits of the capped area and abandonment of monitoring wells no longer being used;
- Site restoration;
- Installation of perimeter security fencing; and
- Institutional controls for protection of the landfill cap using ELURs. The ELURs indicate the groundwater contamination, that groundwater is not to be used for drinking or other purposes, that there is to be no building on the cap or residential use immediately downgradient, that there is no disturbance to the cap and it is to be properly maintained to prevent exposure.

In January 1998 the NTCRA was completed. Since then, community involvement activities were conducted. In June 2001 the Feasibility Study (FS) was completed (O'Brien & Gere Engineers, Inc., 2001a). On September 28, 2001, the ROD was signed, which selected MNA as the remedy (EPA, 2001b). A Consent Decree was signed by the PRPs on various dates between September and November 2002 and by government representatives between September 2002 and January 2003, which was entered by the court on May 7, (United States *v.* Regional Refuse District No. 1, et al., 2003).

Pursuant to the terms of the Consent Decree, RRDD is performing the RA. In spring of 2003 RRDD initiated the long-term monitoring of groundwater. Periodic monitoring data continues to be collected in support of restoration of contaminated groundwater via monitored natural attenuation.

MNA remedy provides for both source control and management of groundwater migration. The approximate clean up time frames for the selected remedy is 16 years to reach groundwater cleanup levels. Statutory 5-year reviews will be conducted as long as waste is in place.

## 4.3 System Operations/Operation and Maintenance (O&M)

RRDD is conducting the long-term monitoring and maintenance activities at the Site. There are two components to the long-term monitoring and maintenance activities, one for the CTDEP and the MNA activities for the EPA. For the CTDEP, a landfill post-closure Operation and Maintenance Manual (OMM) was completed in October 2001 (O'Brien & Gere Engineers, Inc., 2001b). O&M activities include the following:

- Routine inspection and maintenance of constructed features, including the landfill cap, gas venting system, leachate collection and storage system, surface water runoff facilities, the in-stream sedimentation basin, access roads, groundwater monitoring system and physical Site security;

- Mowing of the cap;

- Performance of a Long-term monitoring program including groundwater, surface water (including seeps) and sediment;

- Response to alarm and unforeseen circumstances;

- Coordination of leachate removal and disposal; and

- Evaluation of O&M and monitoring activities and identification of proposed changes to the O&M Manual or Site procedures/policies that would provide a safer and/or more cost-effective operation.

Visual Site monitoring of the landfill occurs on a routine basis to evaluate evidence of erosion; cap differential settlement; the condition of the perimeter fencing, gates, locks and signs; condition of gas monitoring probes; drainage structures and surrounding property structures. The existing groundwater monitoring wells and immediate surrounding area is reviewed during each sampling event.

To date, the CTDEP O&M activities have been ongoing since the capping of the landfill. The MNA sampling activities were initiated in April 2003 with the first quarterly sampling event.

With regard to O&M costs, the following is the total annual system O&M costs for the groundwater, potable well, surface water and sediment sampling, analysis and reporting during the first 5-year period until January 2008. This does not include the mowing, leachate disposal, the downchute repair or other maintenance activities.

**Table 3: Annual System Sampling & Analysis O&M Estimated Costs**

| Dates | | Total Cost Estimate rounded to nearest $1,000 |
|---|---|---|
| From | To | |
| 3/03 | 1/04 | $393,000 |
| 1/04 | 1/05 | $228,000 |
| 1/05 | 1/06 | $139,000 |
| 1/06 | 1/07 | $113,000 |
| 1/07 | 1/08 | $105,000 |

### 4.3.1 Operation and Maintenance (O&M) Issues

This section summarizes issues that were not normal O&M activities. During monitoring well sampling, some wells could not be sampled typically due to well head damage from snow plows or obstructions in the well such as a pump and tubing stuck in the well. Typically these repairs were made or obstructions removed prior to the next sampling event. However, some well obstructions could not be removed.

Due to the cleanup goals being set in the ROD at low background concentrations the analytical laboratory sometimes has a problem achieving these concentrations. As many COC concentrations are still above their background concentrations, this is not an immediate issue, but the required detection limits will need to be achieved particularly as the COC concentrations decrease. This will be addressed with the laboratory.

With regard to the landfill cap, the western downchute erosion identified in the summer of 2005 was repaired in the fall of 2005. There was a significant cost for the repair of the downchute, but it had no impact on the remedy. The cap liner was not affected, only the drainage structure and soil cover. Ongoing monitoring of the cap should identify cap issues prior to them potentially affecting the remedy.

## 5.0 PROGRESS SINCE THE LAST FIVE-YEAR REVIEW

This is the second Five-Year Review for the Site. A summary of the progress for this review period (2003 to 2008) is presented in the following subsections.

## 5.1 Protectiveness Statement from Last Review

The following is the Protectiveness Statement from the last review in 2003:

> As a result of previous actions at the Site, groundwater is the only medium requiring further remedial action, for which Monitored Natural Attenuation (MNA) was the selected remedy. The assessment of the Five-Year review found that the remedy is functioning as designed. The immediate threats have been addressed and the remedy is expected to be protective of human health and the environment when groundwater cleanup goals are achieved through MNA, which was estimated in the Remedial Investigation and Feasibility Study (RI/FS) to occur in about 16 years. In the interim, exposure pathways that could result in unacceptable risks are being controlled.

## 5.2 Status of Recommendations and Follow-up Actions from Last Review

A summary of the 2003 recommendations and follow-up actions from the last review are summarized as follows.

**Status of Issues and/or Recommendations and Follow-Up Actions from 2003**

| Issues | Recommendations and Follow-Up Actions | 2008 Comment/Status |
|---|---|---|
| Discovery of four 55-gallon drums suspected of containing purged groundwater by MW-111. | The drum's contents were tested, removed and the contents placed in the leachate holding tank for disposal. | Completed in 2003. |
| Three groundwater monitoring wells (MW113-I, MW113-D and MW4-R were inaccessible. | Repair of damaged wells MW113- I and MW113-D do not appear necessary at this time. Their potential need will be evaluated based on new Site data. | The wells MW113- I and MW113-D are upgradient wells in an un-impacted area and are not required. Well MW-4R's obstruction was removed in April 2008 after several prior attempts. This well will continue to be used. |
| Not an issue in 2003, but a recommendation. | Continued monitoring of Site groundwater, seeps, soil, surface water and sediment. | The MNA remedy will continue to monitor Site groundwater, seeps, surface water and sediment. There is currently no plan to monitor soil at the Site. |
| Not an issue in 2003, but a recommendation. | Continue to verify that natural attenuation is occurring. | This is an ongoing task in the review of the data. |
| Not an issue in 2003, but a recommendation. | Adoption of ELUR for properties other than the RRDD facility – on Site discussed first, see next item. | The on-Site ELUR, dated July 24, 2003, was recorded at the Barkhamsted Land Records in Volume 124, Page 140 on August 27, 2003. |
| Not an issue in 2003, | Adoption of ELUR for | There are three off-Site ELURs. The Town |

| | | |
|---|---|---|
| but a recommendation. | properties other than the RRDD facility – off Site. | Garage ELUR, dated December 22, 2003, was recorded in Volume 126, Page 347 on January 22, 2004. The MDC ELUR, dated December 22, 2003, was recorded in Volume 126, Page 357 on January 22, 2004. The Morris property ELUR, dated January 4, 2004 was recorded at the Barkhamsted Land Record in Volume 126, Page 689 on February 24, 2004. |
| Not an issue in 2003, but a recommendation. | Continued maintenance of the landfill cap cover. | This is an ongoing activity conducted by the RRDD. |
| Not an issue in 2003, but a recommendation. | To more clearly define the extent of the COCs, it was recommended that additional wells be sampled in future sampling events. The additional wells proposed to be sampled include wells MW-105S and B, MW-108 S and B, MW-109B, MW-117S and B and MW-118S and B. | This comment was made at the start of the sampling program. A review of the data since then indicates that the plume is stable and is not moving significantly to the east. Therefore, these wells were not sampled.<br><br>To better assess the MNA process between impacted and un-impacted areas a new well couplet was installed to the north of well MW-103 by the Barkhamsted DPW garage. Several soil borings were advanced in this area to determine the location of the wells. The new well couplet (MW-120S &120B) was installed in July 2003. |

## 5.3 Results of Implemented Actions, Including Whether They Achieved the Intended Purpose

The results or status of the implemented actions are summarized in Section 5.2. The storm water downchute repair of 2005 is working, and these downchutes are checked during the RRDD and EPA Site inspections. Therefore, the actions to address the issues set forth in Section 5.2 have achieved or are achieving their intended purpose. For the remedy, the MNA sampling and analysis activities are being implemented and are achieving their goal of documenting the MNA remedy, which is proceeding as planned.

## 5.4 Status of Any Other Prior Issues

The issues from the 2003 Five-Year Review are summarized in Section 5.2. There were no other issues reported in the 2003 Five-Year Review.

## 6.0 FIVE-YEAR REVIEW PROCESS

### 6.1 Administrative Components and Community Involvement

On March 20, 2008 a meeting of the Five-Year Review team was led by Byron Mah of EPA, who is the Remedial Project Manager (RPM) for the Barkhamsted Site. The other meeting members included Michael Baer, Eric Nichols and Allen Walker of LFR, Inc. who are conducting the MNA remedy for the RRDD. The Five-Year Review process and schedule were discussed.

On April 19, 2008 a public notice was published in the Register Citizen to announce that the Five-Year Review was to be conducted. A copy of the notice was also provided to the CTDEP Site contact, Maurice Hamel.

As documented in the ROD and the last Five-Year Review, the level of community concern and involvement has varied, and since the completion of the NTCRA, community interest has been minimal. During the past 5 years, the RRDD and LFR have received no community inquiries other than the people involved with the sampling of the potable wells. These inquiries are associated with the sampling schedule and obtaining copies of the sampling results.

### 6.2 Document Review

Site-related documents reviewed as part of this effort. The documents were compared to six aspects of the Site including:

- Basis for the Response Action;
- Implementation of the Response;
- Operation and Maintenance;
- Remedy Performance;
- Legal Documentation; and
- Community Involvement.

### 6.3 Data Review

Groundwater, surface water, seep and stream sediment monitoring pursuant to the ROD was initiated in April and May of 2003. Groundwater, surface water and seep monitoring was initially conducted quarterly for 2 years and then semi-annually to present. Sediment sampling is conducted annually in the spring.

In general, most contaminants were detected at their highest levels early in the remedial history of the Site, prior to the NTCRA and landfill capping in 1998. These higher contaminant concentrations were followed by a drop in contaminant levels, which was likely the result of removal and capping activities at the Site as the source material was capped, limiting migration.

Since 2003, the contaminant concentrations have been decreasing or are in a steady state condition. The following tables summarize the historical sampling results:

- Table 4a – Summary of Historical Groundwater VOC results;
- Table 5 - Summary of Historical Groundwater metal results;
- Table 6 - Summary of Historical Surface water metal results;
- Table 7 – Summary of Historical sediment metal results;
- Table 8 – Summary of Analytical Results – 2003 to 2008 VOCs and SVOCs in Groundwater; and
- Table 9 - Summary of Analytical Results – 2003 to 2008 Metals in Groundwater.

Based on the analytical results, figures were prepared of the COC concentrations from the start of the MNA monitoring in the spring of 2003 and for the most recent sampling result from the spring of 2008. The following figures were prepared:

- Figure 5: Overburden Total VOCs and SVOCs Concentration Map - April 30 - May 8, 2003;
- Figure 5A: Overburden Total VOCs and SVOCs Concentration Map - April 2008;
- Figure 6: Overburden Total BTEX Concentration Map - April 30 - May 8, 2003;
- Figure 6A: Overburden Total BTEX Concentration Map - April 2008;
- Figure 7: Shallow Bedrock Total VOCs and SVOCs Concentration Map - April 30 - May 8, 2003;
- Figure 7A: Shallow Bedrock Total VOCs and SVOCs Concentration Map - April 2008;
- Figure 8: Shallow Bedrock Total BTEX Concentration Map - April 30 - May 8, 2003; and
- Figure 8A: Shallow Bedrock Total BTEX Concentration Map - April 2008.

A review of these figures indicates that the plume concentrations and size has decreased with time from 2003 to 2008. The extent of the plume is reduced and it is located closer to the source area.

With regard to the surface water, seep and sediment sampling, the results of this sampling are consistent or lower than that of the post-NTCRA sampling. For post-NTCRA sampling, the ROD indicated an acceptable risk for surface water and seeps and ongoing monitoring for sediment due to an uncertain risk. The uncertain risk was an ecological risk for benthic invertebrates. The ROD also noted that barium and manganese were identified as the only compounds exceeding the probable effects concentration (PEC) benchmark. Since 2003, the start of the post-ROD sampling, higher concentrations of *barium and manganese were detected in the upstream sample Sed-3 (located at SW-3).* The concentrations of these compounds were lower in the downstream samples. Typically the middle sample (Sed-16) detected slightly higher barium and manganese concentrations than the downstream sample (Sed-9). As noted in Table 7 the PEC concentration for barium and manganese were exceeded in the upstream sample, the barium PEC was typically slightly exceeded in the mid-stream sample and there was one PEC exceedence for barium in 2007 in the downstream sample. The greater metal concentrations in the upstream sample may suggest a possible local condition with the metals occurring naturally in higher concentrations upstream. The upstream location is undeveloped with no obvious source for metals. The concentration change may also be associated with the relocation of the stream during the NTCRA.

An evaluation of the natural attenuation processes at the Site included evaluating four indicators that are recommended in the Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites (OSWER Directive No. 9200.4-17P, April 21, 1999) for evaluating the performance of an MNA remedy. The four indicators are:

- Demonstrate that natural attenuation is occurring according to expectations;
- Detect changes in environmental conditions that may reduce the efficacy of the natural attenuation processes;
- Identify potentially toxic or mobile transformation products; and
- Verify that the plume is not expanding either downgradient, laterally, or vertically.

Since completion of the cap in 1998, the contaminants for which groundwater cleanup levels were established have decreased in concentration. Many contaminants are below the MCL and some are at or approaching the respective cleanup goal of background concentrations in recent sampling events. As set forth previously, Figures 5 to 8A present the total VOC, SVOC and BTEX concentrations in the spring of 2003 and the spring of 2008. These figures indicate the decreasing trend in contaminant levels and in the extent of the contamination in the groundwater. These figures indicate a reduction of the plume in downgradient directions, as well as vertically, and the plume is nearer to the original source area. The concentrations of toluene, benzene and trichloroethene, which are some of the more prevalent and higher concentration COC, are decreasing in concentration. This decreasing trend can be seen in source area wells MW-1S and MW-101S to downgradient wells MW-4S, MW-5S, MW-5B, MW-102B, MW-120B and MW-111B. Based on a review of the MNA data, the data indicates that the groundwater attenuation process conceptualized in the ROD is proceeding essentially as expected.

The evaluation of the MNA parameters is further discussed in Section 7.2.3 of this report.

## 6.4 Site Inspections

On 6/19/08, 6/25/08, and 8/6/08 EPA conducted inspections at the site for the benefit of the 2nd 5 Year Review. The team consisted of Byron Mah, Jean Choi, and Rudy Brown.

As a result of the inspections, EPA has the following observations:

1. The overall LF surface conditions were very good.

2. The repaired downchute appeared very good. In 2005 a downchute was eroded due to a series of heavy rains that did not drain along the downchutes. A repair was made to the downchute.

3. However, one of the downchutes located in the mostly southern slope was full of vegetation on the downchute. The area was treated and part of the cap was mowed as a result of this finding. Upon re-inspection, EPA discovered some erosion that could lead to a potential downchute failure in the future. RRDD#1 has been notified of this and will address this maintenance as part of their on going O&M activities. Please also see inspection memorandum and inspection checklist in Appendix A.

Please note that the operator of the landfill also has regular cap inspections by an independent inspector as part of CTDEP requirements.

## 6.5 Interviews

Interviews were conducted with various parties connected to the Site. Donald Stein, Barkhamsted's first selectman was interviewed on September 2, 2008. No significant problems regarding the Site were identified during the interview. There were no concerns expressed about the protectiveness of the remedy or the operation of the facility.

Jim Hart, the administrator for the Site, (June 19, 2008) did not indicate significant problems regarding the Site. He presented a draft redevelopment master plan that considers the subdivision of lots on the RRDD property that are not contaminated with the waste on site. He indicated that they are considering the installation of wells up gradient and side gradient from the landfill in order to service these lots with potable water. EPA indicated that he would have to demonstrate that this use of water would not have an impact on the remedy.

# 7.0 TECHNICAL ASSESSMENT

## 7.1 Question A: Is the Remedy functioning as intended by the decision documents?

Yes, the review of documents, ARARs, risk assumptions, and the results of the Site inspection indicate that the remedy is functioning as intended by the ROD as an operating remedial action. A copy of the ARARs for the Site is attached at Appendix B. The capping of the landfill, and the collection of leachate have achieved the remedial objectives to minimize the migration of contaminants to groundwater and surface water and prevent direct contact with, or ingestion of, contaminants in soil and sediments. The effective implementation of institutional controls has prevented exposure to contaminated landfill materials.

Operation and maintenance of the cap and drainage structures has been effective, except for the noted downchute repair in 2005. The landfill inspections should be sufficient to identify cap issues, as occurred in identifying the downchute repair need. There is also an increased awareness of the need to maintain the downchutes, so unscheduled visual checks of the downchutes occur more frequently.

Opportunities for system optimization observed during this review include some reduction in monitoring wells to be sampled and/or the frequency of the sampling. These modifications to the monitoring well network are set forth in Section 9 – Recommendations and Follow-up Actions.

The institutional controls, or ELURs, that are in place include prohibitions on the use or disturbance of groundwater until cleanup levels are achieved, and prohibitions on excavation activities, disturbance of the cap, and any other activities or actions that might interfere with the implemented remedy. No activities were observed that would have violated the institutional controls. The cap and the surrounding area were undisturbed, and no new uses of groundwater were observed. The fence around the Site is intact and in good repair.

## 7.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels and remedial action objectives (RAOs) used at the time of remedy selection still valid?

Yes, some cleanup levels and toxicity data may have changed since the remedy selection, but the initial and changed parameters are still valid.

### 7.2.1 Changes in Exposure Pathways

The exposure pathways as indicated in the risk assessment and ROD are provided in Appendix C. There have been no changes in the physical conditions of the Site since approval of the decision documents. However, as of 2002 EPA prepared a Draft Vapor Intrusion Guidance document. This guidance addresses EPA's concern about inhalation of VOCs from contaminated groundwater or soils which currently underlie buildings as well as which may come to be situated underneath a structure at some point in the future.

Where there are several VOCs identified in the groundwater at the Site and there are on-Site buildings, the indoor vapor concern was considered and evaluated. There is an on-Site Garage is located cross-gradient to the plume with VOCs. This Garage has an office on the eastern side of this structure. The EPA OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance), dated November 2002 was used to assess the possible indoor air pathway along with the Connecticut RSR groundwater criteria.

With regard to this building, monitoring wells MW-S-3 (upgradient) to the south, MW-1S (crossgradient) to the west and MW-4S downgradient and north were used for the evaluation. MW-102S (crossgradient) to the east was also reviewed, but the only VOC detected was one J-flagged (estimated) acetone value and the SVOC bis-(2-ethylhexyl)phthalate, which is not considered sufficiently volatile per the Subsurface Vapor Intrusion Guidance. Therefore, there are no VOC affects to the west of the building. Of these monitoring wells, 1S is the well most affected by VOCs. Of the detected VOCs, only benzene was detected above its target groundwater concentration of 5 ppb in Table 2C of the guidance document. In the upgradient well S-3, benzene has never been detected above 5 ppb. In downgradient well 4S, benzene has not been detected above 5 ppb since June 15, 2004 and the highest benzene concentration detected in this well was 6.39 ppb on August 12, 2003.

This office is located cross-gradient to the plume with VOCs, is not located over the plume and an immediately upgradient well has not had VOCs detected above guidance criteria since the MNA sampling started in 2003. The cross gradient and downgradient wells are only slightly above or are below the EPA guidance criteria. In addition, the Connecticut RSR groundwater criteria for the indoor air pathway were reviewed. None of the VOCs in these wells exceed the Connecticut RSR proposed GWVC criteria for residential or industrial/commercial settings. For benzene, the Connecticut RSR proposed GWVC criteria for residential is 130 ug/l and for industrial/commercial settings it is 310 ug/l. Based on the Site conditions and guidance, the vapor intrusion pathway does not appear to be a concern for the on-Site office building. The groundwater flow direction and data do not suggest this will become an issue in the future, but if a change in the groundwater flow direction occurs or VOCs are detected in the upgradient well, such conditions would warrant further attention. Therefore, no changes in exposure pathways have occurred that would affect the protectiveness of the remedy. A copy of the Vapor Intrusion Pathway Summary Page and tables is included as Appendix D.

### 7.2.2 Changes in Toxicity, ARARs, and Other Contaminant Characteristics

*Changes in Toxicity*

(Not applicable). Because all groundwater cleanup goals were established based on the CT RSRs (as the most stringent of the criteria identified in the remedy) which were in turn based on background levels or limits of analytical resolution, there are no changes in toxicity and other contaminant characteristics that would affect the chosen remedy. Furthermore, as the groundwater cleanup levels established in the 2001 ROD are consistent with site specific background levels of contamination, they and the remedy are viewed as being protective of public health consistent with CERCLA expectations for remedial actions,).

*Changes in ARARs, Standards, and TBCs (To Be Considered)*

Cleanup levels were established in the ROD for groundwater for all chemicals of concern identified in the Baseline Risk Assessment found to pose an unacceptable risk to either public health or the environment. Cleanup levels were set based on the ARARs (*e.g.*, non-zero Drinking Water Maximum Contaminant Level Goals (MCLGs), MCLs, and more stringent State Remediation Standard Regulations), as available. This resulted in groundwater cleanup levels for each chemical of concern being set at its background concentration, per Connecticut RSRs, Section 22a-133k-3(a). A list of tentative background concentrations was presented in the ROD. During the Remedial Action Phase, EPA in consultation with CTDEP will determine whether these concentrations represent background for this Site. EPA will only change these values in the ROD if they are necessary pursuant to Section 117(c) of CERCLA. A process often referred to as an Explanation of Significant Differences.

There is one change that has occurred in the Applicable, Relevant, or Appropriate Requirements (ARARs) and To Be Considereds (TBCs) since the ROD was signed. EPA adopted a lower Maximum Concentration Level (MCL) standard for arsenic in groundwater. This changed the standard from 50 ppb to 10 ppb, which became effective on January 22, 2006. This change in the arsenic MCL is greater than the more restrictive background concentration of 5 ppb as established in the ROD.

Other risk based cleanup goals as presented in the ROD remain substantively unchanged.

### 7.2.3 Expected Progress Towards Meeting RAOs

Groundwater modeling conducted during the FS (O'Brien & Gere Engineers, Inc. 2001a) estimated that natural attenuation would achieve the groundwater cleanup levels in the overburden in approximately 15.6 years, and in the bedrock aquifer in approximately 6 years. These results were obtained by simulating the flow of groundwater and the migration and attenuation of two COCs, 4-methylphenol and 2-butanone. At the time, these compounds were present in relatively high concentrations in groundwater. Consequently, the cleanup times for these compounds were considered to represent conservative estimates of the time for remediation of all groundwater COCs. Based on calibration to trends in the groundwater monitoring data through the RI/FS period, rates of contaminant degradation were projected into the future through the process of the model calibration. However, due to uncertainties associated with contaminant transport modeling, the predicted cleanup times were considered rough estimates.

Previous review of historical groundwater quality data (Section 6.3) indicated that the concentrations of Site-related constituents are either remaining relatively stable, or are decreasing over time. Geochemical evidence that indicated subsurface conditions are amenable for microbially-mediated degradation included the following:

- an abundance of dissolved organic carbon that can be used as a carbon source (electron donor) by microbes;
- anaerobic conditions that sustain reductive dechlorination;
- presence of organic compounds that can undergo fermentation reactions (BTEX, ketones) that produce hydrogen, which can be utilized by microbes during reductive dechlorination;
- low concentrations of nitrate that will not suppress the reductive dechlorination pathway;
- low sulfate concentrations within the plume as compared to background, suggesting utilization as an electron acceptor;
- some degree of increased alkalinity in the plume compared to background suggesting that the plume is biologically active;
- decreases in oxidation-reduction potential in the plume as compared to background, suggesting the geochemical conditions within the plume are reducing due to biological activity;
- the presence of methane that suggests highly reducing conditions and microbial degradation; and
- groundwater pH ranges that are suitable for microbial populations.

In 2003, a long-term groundwater-monitoring program was initiated that was designed to assess the progress of natural attenuation over time. Summary results of the last five years of this monitoring program are shown in Tables 4 to 9. These data indicate that the COC concentrations are decreasing with time or are relatively stable. In some cases the decreases are significant, such as the total VOCs have decreased by about 1 order of magnitude (10,000 down to 1,000 ug/L (or 1 ppm)) in well MW-101S, which is located just downgradient of the landfill boundary and is indicated on isoconcentration contour figures. Isoconcentration contour figures for total VOCs and SVOCs and total BTEX are shown in Figures 5 through 8A for 2003 and 2008 that further indicate the overall decline in concentrations.

With regard to the model for the two COCs, 4-methylphenol and 2-butanone, the sampling results indicate that actual Site conditions are following the general trend of the model predictions, and are generally decreasing in concentration at a greater rate than the model predictions. Graphs of concentration versus time for these two COCs are indicated on Figures 9 to 12. These graphs are presented for wells MW-101S and MW-5S, which represent the more affected monitoring wells located within the centerline of the plume. This graph shows the initial model predictions for the natural attenuation and groundwater extraction alternatives, along with the actual measured concentrations. These graphs indicate that the measured concentrations are lower than the model predictions, and that plume attenuation has exceeded expectations.

Two additional graphs of the centerline of the plume as it passes through the landfill are indicated in Figures 13 and 14 for total VOC and SVOC, total BTEX, and MNA parameters ferrous iron, methane, dissolved oxygen (DO), nitrate and chemical oxygen demand (COD). Figure 13 presents the graph of these data for November 2003, and Figure 14 shows the data for April 2008. These figures indicate low contaminant concentrations in groundwater upgradient of the landfill, increased concentrations in the landfill and declining concentrations downgradient of the landfill. The patterns of indicator parameters are consistent and expected, with DO and nitrate decreasing in the landfill as a result of biological activity, and rebounding downgradient, while the other parameters COD, methane and ferrous iron increase within the landfill footprint and then tend to attenuate downgradient of the landfill. The peak concentrations of most COCs show a marked decrease from 2003 to 2008, consistent with the overall decrease in the concentration of COCs within the plume.

Graphs of groundwater concentration trends with time for the COCs benzene; toluene; 1,4-dichlorobenzene; trichloroethene and 2,4-dimethlyphenol show similar decreasing concentration trends. These graphs are presented in Appendix E. For the COC metals arsenic, chromium and lead, the groundwater concentrations are typically at non-detect concentrations as indicated in Table 5. Higher concentrations are observed in the centerline of the plume starting in the landfill and immediately downgradient, but generally at low concentrations. A graph of the arsenic groundwater concentration trends is also included in Appendix E for the wells where arsenic has consistently been detected.

With regard to the surface water, seep and sediment sampling, the results of this sampling are consistent or lower than that of the post-NTCRA sampling indicating good progress towards meeting the RAO. For post-NTCRA sampling, the ROD indicated an acceptable risk for surface water and seeps and ongoing monitoring for sediment due to an uncertain risk. The uncertain risk was an ecological risk for benthic invertebrates. The ROD also noted that barium and manganese were identified as the only compounds exceeding the probable effects concentration (PEC) benchmark. Since 2003, the start of the post-ROD sampling, higher concentrations of barium and manganese were detected in the upstream sample Sed-3 (located at SW-3). The concentrations of these compounds were lower in the downstream samples. Typically the middle sample (Sed-16) detected slightly higher barium and manganese concentrations than the downstream sample (Sed-9). As noted in Table 7the PEC concentrations for barium and manganese were exceeded in the upstream sample, the barium PEC was typically slightly exceeded in the mid-stream sample and there was one PEC exceedence for barium in 2007 in the downstream sample. The greater metal concentrations in the upstream sample may suggest a possible local condition with the metals occurring naturally in higher concentrations upstream. The upstream location is undeveloped with no obvious source for metals. The concentration change may also be associated with the relocation of the stream during the NTCRA.

### 7.3 Questions C: Other information that could call into question the protectiveness of the remedy?

No, there is no information that calls into question the protectiveness of the remedy.

### 7.4 Technical Assessment Summary

The review of documents, ARARs, risk assumptions, and the results of the Site inspection indicate that the remedy is functioning as intended by the ROD. The exposure assumptions, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection remain valid. Some changes in agency-recognized toxicity factors have occurred for selected Site-related chemicals, but these changes have not affected cleanup levels, nor are they expected to significantly affect overall Site risk. Long-term monitoring data indicate that the groundwater plume is shrinking, contaminant concentrations are decreasing or are stable and that acceptable progress is being made towards meeting RAOs.

## 8.0 ISSUES

As of the date of this writing, there have been no significant problems or issues that prevent the response action from being protective of human health and the environmental upon completion.

## 9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

There were no issues affecting the protectiveness of the remedy requiring follow-up actions. However, there are recommendations not directly related to the protectiveness of the remedy that are presented here. These recommendation and follow-up actions include improved operation & maintenance (O&M) activities, better laboratory performance and a revised sampling plan to optimize the remedy.

For the O&M activities the focus of this recommendation is associated with the monitoring of the cap and its integrity based on the 2005 downchute failure. As part of the EPA annual inspection, the cap is reviewed. The RRDD uses an engineer to conduct quarterly landfill inspections for compliance with Connecticut requirements. The RRDD has informed this engineer of the downchute issue to increase the awareness of the downchute conditions in reporting to the RRDD. The RRDD will also notify the EPA of a condition that may affect the integrity of the downchute.

Based on the decreasing size of the plume and COC concentrations, a revised sampling plan to optimize the remedy is recommended. This includes changes in wells to be sampled and the frequency of the sampling. As an example, the plume is now deeper downgradient in the monitoring well couplet MW-111. Currently, MNA parameters are sampled in the shallow well MW-111S and MW-111B; however, there are increased contaminant concentrations in the deeper well MW-111I (intermediate bedrock), which is not monitored for MNA parameters. Therefore, it is recommended that MW-111S no longer be monitored for MNA parameters, but well MW-111I will have the MNA parameters added to its suite of analyses.

Refer to Table 12 for a complete listing of recommended changes to sampling locations, rationale and frequency to optimize the remedy.

## 10.0 PROTECTIVENESS STATEMENT

This five-year review has found that the remedy is functioning as designed. The groundwater remedy is expected to be protective of human health and the environmental upon completion, when groundwater cleanup goals are achieved through MNA, which was estimated in the Remedial Investigation and Feasibility Study (RI/FS) to occur in about 16 years. In the interim, exposure pathways that could result in unacceptable risks are being controlled and institutional controls are preventing exposure to, or the ingestion of, contaminated groundwater. Long-term protectiveness of the remedial action will be verified by obtaining additional groundwater samples to evaluate the contaminant plume extent and MNA progress. Because the Remedial Action at all OUs are protective, the Site is protective of human health and the environment.

## 11.0 NEXT REVIEW

The due date for the second five-year review is September 2013.

## REFERENCES

Fuss & O'Neill 1992. RRDD#1 Landfill Closure Plan, Barkhamsted CT, September.

O'Brien & Gere Engineers, Inc. 1996. Remedial Investigation (RI) -Barkhamsted-New Hartford Landfill Superfund Site. February.

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United States of America and State of Connecticut *v.* Regional Refuse Disposal District No. 1, et al. 2003. Consent Decree, U.S. District Court for the District of Connecticut. May 7.

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State of Connecticut Department of Environmental Protection: Draft Proposed Revisions to the Remediation Standard Regulations (RSR).

# APPENDIX A

Landfill Inspection Checklist

## Appendix A: Five-Year Review Site Inspection Checklist

| I. SITE INFORMATION | |
|---|---|
| **Site Name:** Barkhamsted Landfill | **Date of Inspection:** 6/19/08, 6/25/08, 8/6/08 |
| **Location and Region:** Barkhamsted, CT | **EPA ID:** CTD980732333 |
| **Agency, office, or company leading the five-year review:** EPA-Region I | Weather/temperature: Clear / 85 F |
| **Remedy Includes** (Check all that apply) | |
| ☒ Landfill cover/containment<br>☐ Access Controls<br>☒ Institutional Controls<br>☐ Groundwater pump and treatment<br>☐ Surface water collection and treatment | ☒ Monitored Natural Attenuation<br>☐ Groundwater containment<br>☐ Vertical Barrier Walls<br>☐ Other |
| **Attachments:** ☐ Inspection team roster | ☐ Site Map |

| II. INTERVIEWS (Check all that apply) |
|---|
| 1. **O&M Site Manager**: Jim Hart (Name) General Manager (Title) 6/19/2008 (Date)<br>Interviewed Jim Hart at site office ☒ At office ☐ By phone Tel. No. _____<br>Problems, suggestions; ☐ Report attached |
| 2. **O&M Site staff** : (Name) (Title) (Date) |
| 3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply<br>Agency Town of Barkhamsted<br>Contact Donald Stein (Name) 1st Selectman (Title) 6/19/2008 (Date) (860) 379-8285 (Phone No.)<br>Problems; suggestions; ☐ Report attached<br><br>Agency<br>Contact (Name) (Title) (Date) (Phone No.)<br>Problems; suggestions; ☐ Report attached<br><br>Agency<br>Contact (Name) (Title) (Date) (Phone No.)<br>Problems; suggestions; ☐ Report attached<br><br>Agency<br>Contact (Name) (Title) (Date) _____ (Phone No.)<br>Problems; suggestions; ☐ Report attached |

4. **Other Interviews** (optional) ☐ Report attached.

## Appendix A: Five-Year Review Site Inspection Checklist

| **III. ON-SITE DOCUMENTS & RECORDS VERIFIED** (Check all that apply) | | | |
|---|---|---|---|
| 1. **O&M Documents** | | | |
| ☒ O&M Manual | ☒ Readily Available | ☐ Up to Date | ☐ N/A |
| ☒ As-built drawings | ☒ Readily Available | ☐ Up to Date | ☐ N/A |
| ☐ Maintenance Logs | ☐ Readily Available | ☐ Up to Date | ☐ N/A |
| Remarks: | | | |
| 2. **Site-Specific Health and Safety Plan** | ☒ Readily Available | ☐ Up to Date | ☐ N/A |
| Contingency Plan /Emergency Response Plan | ☒ Readily Available | ☐ Up to Date | ☐ N/A |
| Remarks: | | | |
| 3. **O&M and OSHA Training Records** | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| Remarks: | | | |
| 4. **Permits and Service Agreements** | | | |
| ☐ Air Discharge Permit | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| ☐ Effluent Discharge | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| ☐ Waste Disposal, POTW | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| ☐ Other permits | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| Remarks: | | | |
| 5. **Gas Generation Records** | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| Remarks: | | | |
| 6. **Settlement Monument Records** | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| Remarks: | | | |
| 7. **Groundwater Monitoring Records** | ☒ Readily Available | ☒ Up to Date | ☐ N/A |
| Remarks: | | | |
| 8. **Leachate Extraction Records** | ☒ Readily Available | ☒ Up to Date | ☐ N/A |
| Remarks: | | | |
| 9. **Discharge Compliance Records** | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| ☐ Air | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| ☐ Water (effluent) | ☐ Readily Available | ☐ Up to Date | ☒ N/A |
| Remarks: | | | |
| 10. **Daily Access/Security Logs** | ☒ Readily Available | ☐ Up to Date | ☒ N/A |
| Remarks: | | | |

## Appendix A: Five-Year Review Site Inspection Checklist

| IV. O&M COSTS | |
|---|---|
| 1. **O&M Organization** | |
| ☐ State in-house | ☐ Contractor for State |
| ☒ PRP in-house | ☒ Contractor for PRP |
| ☐ Federal Facility in-house | ☐ Contractor for Federal Facility |
| ☐ Other O&M costs not provided. | |
| 2. **O&M Cost Records** | |
| ☐ Readily Available | ☐ Up to date |
| ☐ Funding mechanism/agreement in place | |
| Original O&M cost estimate | ☐ Breakdown attached |

Total annual cost by year for review period if available

| | | | | |
|---|---|---|---|---|
| From | _____ (Date) | To _____ (Date) | _____ (Total Cost) | ☐ Breakdown attached |
| From | _____ (Date) | To _____ (Date) | _____ (Total Cost) | ☐ Breakdown attached |
| From | _____ (Date) | To _____ (Date) | _____ (Total Cost) | ☐ Breakdown attached |
| From | _____ (Date) | To _____ (Date) | _____ (Total Cost) | ☐ Breakdown attached |
| From | _____ (Date) | To _____ (Date) | _____ (Total Cost) | ☐ Breakdown attached |

3. **Unanticipated or Unusually High O&M Costs During Review Period**
Describe costs and reasons:

| V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A | | | |
|---|---|---|---|
| **A. Fencing** | | | |
| 1. **Fencing damaged** | ☐ Location shown on site map | ☐ Gates secured | ☒ N/A |
| Remarks: | | | |
| **B. Other Access Restrictions** | | | |
| 2. **Signs and other security measures** | ☐ Location shown on site map | | ☒ N/A |
| Remarks: | | | |

<u>**Appendix A: Five-Year Review Site Inspection Checklist**</u>

**C. Institutional Controls (IC)**

1. **Implementation and enforcement**

| | | | |
|---|---|---|---|
| Site conditions imply ICs not properly implemented | ☐ Yes | ☒ No | ☐ N/A |
| Site conditions imply ICs being fully enforced | ☒ Yes | ☐ No | ☐ N/A |

Type of monitoring (e.g., self-reporting, drive-by)
Frequency
Responsible party/agency CTDEP

| | | | | |
|---|---|---|---|---|
| Contact | Maurice Hamel | Supervisor, Rem. Div. | 6/19/2008 | (860) 424-3787 |
| | (Name) | (Title) | (Date) | (Tel No.) |

| | | | |
|---|---|---|---|
| Reporting is up-to-date | ☐ Yes | ☐ No | ☒ N/A |
| Reports are verified by the lead agency | ☐ Yes | ☐ No | ☒ N/A |
| Specific requirements in deed or decision documents have been met | ☒ Yes | ☐ No | ☐ N/A |
| Violations have been reported | ☐ Yes | ☐ No | ☒ N/A |

Other problems or suggestions: ☐ Report attached
CTDEP Manages their ELURs Environmental Land Use Restrictions which are recorded on the deed.

2. Adequacy ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks

**D. General**

1. **Vandalism/trespassing** ☐ Location shown on site map ☒ No vandalism evident
Remarks:

2. **Land use changes on site** ☒ N/A
Remarks:

3. **Land use changes off site** ☒ N/A
Remarks:

**VI. GENERAL SITE CONDITIONS**

**A. Roads** ☒ Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map ☐ Roads Adequate ☐ N/A
Remarks: Good condition

B. **Other Site Conditions**
Remarks:

## Appendix A: Five-Year Review Site Inspection Checklist

| VII. LANDFILL COVERS ☒ Applicable ☐ N/A | | |
|---|---|---|
| **A. Landfill Surface** | | |
| 1. **Settlement** (Low spots)<br>Areal Extent<br><br>Remarks: | ☐ Location shown on site map<br>Depth | ☒ Settlement not evident |
| 2. **Cracks**<br>Lengths<br>Remarks: | ☐ Location shown on site map<br>Widths | ☒Cracking not evident<br>Depths |
| 3. **Erosion**<br>Areal Extent<br><br>Remarks: See Attached Report and Pictures | ☒ Location shown on site map<br>Depth | ☐Erosion not evident |
| 4. **Holes**<br>Areal Extent<br><br>Remarks: | ☐ Location shown on site map<br>Depth | ☒Holes not evident |
| 5. **Vegetative Cover** ☐ Grass ☒ Cover properly established ☒ No signs of stress<br>☐ Trees/Shrubs (indicate size and locations on a diagram)<br>Remarks: | | |
| 6. **Alternative Cover** (armored rock, concrete, etc.) ☐ Applicable ☒ N/A<br>Remarks: | | |
| 7. **Bulges**<br>Areal Extent<br><br>Remarks: | ☐ Location shown on site map<br>Height | ☒Bulges not evident |
| 8. **Wet Areas/Water Damage** ☒Wet Areas/water damage not evident<br>☐ Wet Areas ☐ Location shown on site map Areal Extent<br>☐ Ponding ☐ Location shown on site map Areal Extent<br>☐ Seeps ☐ Location shown on site map Areal Extent<br>☐ Soft subgrade ☐ Location shown on site map Areal Extent<br>Remarks: | | |
| 9. **Slope Instability** ☐ Slides<br><br>Areal Extent: | ☐ Location shown on site map | ☒No evidence of slope instability |

Remarks:

## Appendix A: Five-Year Review Site Inspection Checklist

| |
|---|
| **B. Benches** ☒ Applicable ☐ N/A<br>(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.) |
| 1. **Flows Bypass Bench** ☐ Location shown on site map ☒N/A or okay<br>Remarks: |
| 2. **Bench Breached** ☐ Location shown on site map ☒N/A or okay<br>Remarks: |
| 3. **Bench Overtopped** ☐ Location shown on site map ☐N/A or okay<br>Remarks: |
| **C. Letdown Channels** ☒ Applicable ☐ N/A<br>(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off the landfill cover without creating erosion gullies.) |
| 1. **Settlement** ☐ Location shown on site map ☒No evidence of settlement<br>Areal extent Depth<br>Remarks: |
| 2. **Material Degradation** ☐ Location shown on site map ☒No evidence of degradation<br>Areal extent Depth<br>Remarks: |
| 3. **Erosion** ☐ Location shown on site map ☐No evidence of erosion<br>Areal extent Depth<br>Remarks: See report attached |
| 4. **Undercutting** ☐ Location shown on site map ☒No evidence of undercutting<br>Areal extent Depth<br>Remarks: |
| 5. **Obstructions** Type ☒No obstructions<br>☐ Location shown on site map Areal extent<br>Remarks: |
| 6. **Excessive Vegetative Growth** Type<br>☐ No evidence of excessive growth<br>☐ Vegetation in channels does not obstruct flow<br>☐ Location shown on site map Areal extent<br>Remarks: Weeds growing on gabion downchutes. Site manager was notified and weeds were |

addressed

| |
|---|
| **D. Cover Penetrations** ☒ Applicable ☐ N/A |
| 1. **Gas Vents** ☐ Active ☒ Passive<br>☐ Properly Secured/Locked ☐ Functioning ☐ Routinely sampled ☐ Good condition<br>☐ Evidence of leaking at penetration ☐ Needs maintenance ☐ N/A<br>Remarks: |
| 2. **Gas Monitoring Probes**<br>☐ Properly Secured/Locked ☐ Functioning ☐ Routinely sampled ☐ Good condition<br>☐ Evidence of leaking at penetration ☐ Needs maintenance ☒ N/A<br>Remarks: |
| 3. **Monitoring Wells** (within surface of landfill)<br>☒ Properly Secured/Locked ☒ Functioning ☒ Routinely sampled ☒ Good condition<br>☐ Evidence of leaking at penetration ☐ Needs maintenance ☐ N/A<br>Remarks: |
| 4. **Leachate Extraction Wells**<br>☐ Properly Secured/Locked ☐ Functioning ☐ Routinely sampled ☐ Good condition<br>☐ Evidence of leaking at penetration ☐ Needs maintenance ☒ N/A<br>Remarks: |
| 5. **Settlement Monuments**<br>☐ Located ☐ Routinely sampled ☒ N/A<br>Remarks: |
| **E. Gas Collection and Treatment** ☐ Applicable ☒ N/A |
| 1. **Gas Treatment Facilities**<br>☐ Flaring ☐ Thermal destruction ☐ Collection for reuse<br>☐ Good condition ☐ Needs maintenance<br>Remarks: |
| 2. **Gas Collection Wells, Manifolds and Piping**<br>☐ Good condition ☐ Needs maintenance<br>Remarks: |
| 3. **Gas Monitoring Facilities** (e.g., gas monitoring of adjacent homes or buildings)<br>☐ Good condition ☐ Needs maintenance ☐ N/A<br>Remarks: |

**Appendix A: Five-Year Review Site Inspection Checklist**

**F. Cover Drainage Layer** ☐ Applicable ☒ N/A
1. **Outlet Pipes Inspected** ☐ Functioning ☒ N/A
Remarks:

2. **Outlet Rock Inspected** ☐ Functioning ☒ N/A
Remarks:

**G. Detention/Sediment Ponds** ☐ Applicable ☒ N/A
1. **Siltation** Areal Extent Depth ☐ Siltation not evident
Remarks:

2. **Erosion** Areal Extent Depth ☐ Erosion not evident
Remarks:

3. **Outlet Works** ☐ Functioning ☒ N/A
Remarks:

4. **Dam** ☐ Functioning ☒ N/A
Remarks:

**H. Retaining Walls** ☐ Applicable ☒ N/A
1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
Horizontal displacement Vertical displacement
Rotational displacement
Remarks:

**I. Perimeter Ditches/Off-Site Discharge** ☐ Applicable ☒ N/A
1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
Areal extent Depth
Remarks:

2. **Vegetative Growth** ☐ Location shown on site map ☒ N/A
☐ Vegetation does not impede flow
Areal extent Type
Remarks:

3. **Erosion** ☐ Location shown on site map ☒ N/A
Areal extent Type
Remarks:

4. **Discharge Structure** ☐ Functioning ☒ N/A
Remarks:

# Appendix A: Five-Year Review Site Inspection Checklist

## Appendix A: Five-Year Review Site Inspection Checklist

| VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A |
|---|
| 1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident<br>Areal extent Type<br>Remarks: |
| 2. **Performance Monitoring** Type of monitoring<br>☐ Performance not monitored Frequency<br>☐ Evidence of breaching Head differential<br>Remarks: |
| **IX. GROUNDWATER/SURFACE WATER REMEDIES** ☐ Applicable ☒ N/A |
| **A. Groundwater Extraction Wells, Pumps and Pipelines** ☐ Applicable ☒ N/A |
| 1. **Pumps, Wellhead Plumbing and Electrical**<br>☐ Good condition ☐ All required wells properly operating ☐ Needs maintenance ☐ N/A<br>Remarks: |
| 2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**<br>☐ Good condition ☐ Needs maintenance<br>Remarks: |
| 3. **Spare Parts and Equipment**<br>☐ Readily Available ☐ Good condition ☐ Requires Upgrade ☐ Needs to be provided<br>Remarks: |
| **B. Surface Water Collection Structures, Pumps and Pipelines** ☐ Applicable ☒ N/A |
| 1. **Collection Structures, Pumps and Electrical**<br>☐ Good condition ☐ Needs maintenance<br>Remarks: |
| 2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**<br>☐ Good condition ☐ Needs maintenance<br>Remarks: |
| 3. **Spare Parts and Equipment**<br>☐ Readily Available ☐ Good condition ☐ Requires Upgrade ☐ Needs to be provided<br>Remarks: |

## Appendix A: Five-Year Review Site Inspection Checklist

**C. Treatment System** ☐ Applicable ☒ N/A

1. **Treatment Train** (Check components that apply)
☐ Metals Removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters
☐ Additive (e.g., chelation agent, flocculent)
☐ Others
☐ Good condition ☐ Needs maintenance
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
Quantity of groundwater treated annually
Quantity of surface water treated annually
Remarks:

2. **Electrical Enclosures and Panels** (properly rated and functional)
☒ N/A ☐ Good condition ☐ Needs maintenance
Remarks:

3. **Tanks, Vaults, Storage Vessels**
☐ N/A ☒ Good condition ☐ Proper Secondary containment ☐ Needs maintenance
Remarks:

4. **Discharge Structures and Appurtenances**
☒ N/A ☐ Good condition ☐ Needs maintenance
Remarks:

5. **Treatment Building(s)**
☒ N/A ☐ Good condition (esp. roof and doorways ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks:

6. **Monitoring Wells** (pump and treat remedy)
☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs maintenance ☐ N/A
Remarks:

| D. Monitoring Data |
|---|
| 1. Monitoring Data<br>☒ Is routinely submitted on time ☒ Is of acceptable quality<br>2. Monitoring Data Suggests:<br>☒ Groundwater plume is effectively contained ☒ Contaminant concentrations are declining<br>Remarks: |
| **E. Monitoring Natural Attenuation (MNA)** |
| 1. **Monitoring Wells** (MNA remedy)<br>☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☐ Good condition<br>☒ All required wells located ☐ Needs maintenance ☐ N/A<br>Remarks: |
| **X. OTHER REMEDIES** |
| If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction. |
| **XI. OVERALL OBSERVATIONS** |
| **A. Implementation of the Remedy** |
| Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).<br>Remedy is to contain contaminants and plume coming from the landfill and remediate the plume to the compliance boundary. |

| B. Adequacy of O&M |
|---|
| Describe issues and observations related to the implementation and scope of the O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.<br><br>It was observed, after a rain storm that some of the surface water was discharging to the side of the downchute at the bottom of the slope rather than to and within the downchute channel. The side slope of the downchute at the bottom may need to be corrected to prevent side leakage.<br><br>Small plants near the gas vents have been observed and should be removed to minimize the root penetration into the underlying low permeability layers. |

# APPENDIX B

Applicable or Relevant and Appropriate Requirements (ARARs)

# APPENDIX B

# ARARs Table

| BARKHAMSTED-NEW HARTFORD SUPERFUND SITE, BARKHAMSTED, CONNECTICUT<br>POTENTIAL STATE AND FEDERAL CHEMICAL-SPECIFIC ARARs<br>ALTERNATIVE MM-2 (Management/Natural Attenuation) | | | | |
|---|---|---|---|---|
| Authority | Requirement | Status | Requirement Synopsis | Action Taken to Meet ARAR |
| GROUNDWATER | | | | |
| Federal Requirements | Safe Drinking Water Act (SDWA) Maximum Contaminant Levels (MCLs)<br><br>40 CFR §141.11 - 141.16 | Relevant and Appropriate | MCLs have been promulgated for several common organic and inorganic contaminants. These levels regulate the concentration of contaminants in public drinking water supplies, but may also be considered relevant and appropriate for groundwater aquifers used for drinking water. | COPCs were compared to MCLs. MCLs were utilized to evaluate the clean-up criteria. |

**BARKHAMSTED-NEW HARTFORD SUPERFUND SITE, BARKHAMSTED, CONNECTICUT**

**POTENTIAL STATE AND FEDERAL CHEMICAL-SPECIFIC ARARs**

**ALTERNATIVE MM-2 (Management/Natural Attenuation)**

| Authority | Requirement | Status | Requirement Synopsis | Action Taken to Meet ARAR |
|---|---|---|---|---|
| | Maximum Contaminant Level Goals (MCLGs)<br><br>40 CFR §141.50-141.51 | Relevant and Appropriate | MCLGs are health-based criteria to be considered for drinking water sources. MCLGs are available for several organic and inorganic contaminants. When non-zero MCLGs are available, they are generally used in lieu of MCLs as initial goals for the remedy. | When non-zero MCLGs are available, they are generally used in lieu of MCLs as initial goals for the remedy to be attained at the compliance boundary. A restriction on use of groundwater within the compliance boundary will be established and an appropriate monitoring program will be conducted until the groundwater concentrations are less than the MCLGs. |

**BARKHAMSTED-NEW HARTFORD SUPERFUND SITE, BARKHAMSTED, CONNECTICUT**

**POTENTIAL STATE AND FEDERAL CHEMICAL-SPECIFIC ARARs**

**ALTERNATIVE MM-2 (Management/Natural Attenuation)**

| Authority | Requirement | Status | Requirement Synopsis | Action Taken to Meet ARAR |
|---|---|---|---|---|
| State Requirements | Standards for Quality and Adequacy of Public Drinking Water<br><br>RCSA §19-13-B101 through B102 | Relevant and Appropriate | Regulations similar to the Safe Drinking Water Act where by standards for water quality in private water supply systems and standards for quality of public drinking water have been established. | These standards will be compared to federal standards. If the state standards are more stringent than the federal standards, then the state standards will be met by the remedy. |

**BARKHAMSTED-NEW HARTFORD SUPERFUND SITE, BARKHAMSTED, CONNECTICUT**

**POTENTIAL STATE AND FEDERAL CHEMICAL-SPECIFIC ARARs**

**ALTERNATIVE MM-2 (Management/Natural Attenuation)**

| Authority | Requirement | Status | Requirement Synopsis | Action Taken to Meet ARAR |
|---|---|---|---|---|
| | Remediation Standard Regulations<br><br>RCSA<br><br>§22a-133k- 1through 3 | Applicable | Substances that are part of a release at a site must be remediated. In some cases, groundwater must be remediated to background concentrations. For other cases, as described in §22a-133k-3(d)(1) and (2), the regulations provide specific numeric clean up criteria for a wide variety of contaminants in groundwater, surface water and soil vapor. Any substance which is part of a release but does not have established criteria, criteria must be derived and approved by the Commissioner. | These standards will be compared to federal standards. If the state standards are more stringent than the federal standards, then the state standards will be met by the remedy. Under state standards, all substances in the groundwater plume will be remediated to background concentrations, unless conditions listed in §22a-133k-3(d)(1) and (2) are met. |

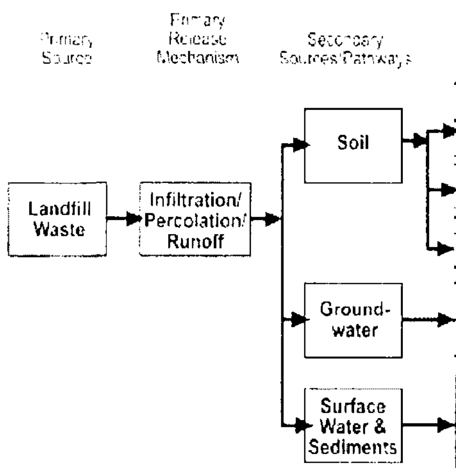
| | | | | |
|---|---|---|---|---|
| State Requirements | Water Quality Standards<br><br>CGS §22a-426 | Applicable | Connecticut's Water Quality Standards were adopted under this statute. They establish specific numeric criteria, and anti-degradation policies for groundwater and surface water. The groundwater classification of the Site is GA and the state's goal is to restore the groundwater to a quality consistent with its use for drinking without treatment. | Remedial activities will be under taken in a manner which is consistent with the anti-degradation policy in the water quality standards. If any remedial activities occur that are regulated under these provisions, the use of engineering controls and best management practices may be required to prevent or minimize adverse impacts to the waters of the state. |

## APPENDIX C

Potentially Complete Exposure Pathways

# Appendix C

Potentially complete exposure pathways (from USEPA, 2001)




| Secondary Sources/Pathways | Exposure Route | PRE-NTCRA Receptor: Human – Trespassers | PRE-NTCRA Receptor: Human – Residents | PRE-NTCRA Receptor: Biota – Terrestrial | PRE-NTCRA Receptor: Biota – Aquatic | POST-NTCRA Receptor: Human – Trespassers | POST-NTCRA Receptor: Human – Residents | POST-NTCRA Receptor: Biota – Terrestrial | POST-NTCRA Receptor: Biota – Aquatic |
|---|---|---|---|---|---|---|---|---|---|
| Soil | Ingestion | X | X | X | | * | * | X[a] | |
| Soil | Dermal | X | X | X | | * | * | X[a] | |
| Soil | Plant Uptake | | | X | | | | X[a] | |
| Soil | Food Web | | | X | | | | X[a] | |
| Ground-water | Ingestion | | X | | | | * | | |
| Ground-water | Dermal | | X | | | | * | | |
| Surface Water & Sediments | Dermal | | | | X | | | | X[a] |
| Surface Water & Sediments | Ingestion | | | X | | | | X[a] | |
| Surface Water & Sediments | Food Web | | | X | | | | X[a] | |

* Exposure prevented by capping or institutional controls

X[a] Exposure only to media outside of cap

# APPENDIX D

Vapor Intrusion Pathway Summary Page

**Appendix D**
**Vapor Intrusion Pathway Summary**
**Five-Year Review Report 2008**
**Barkhamsted Landfill**

As of 2002 EPA prepared a Draft Vapor Intrusion Guidance document. This guidance addresses EPA's concern about inhalation of volatile organic compounds (VOCs) from contaminated groundwater or soils which currently underlie buildings as well as which may come to be situated underneath a structure at some point in the future.

Where there are several VOCs identified in the groundwater at the Site and there are on-Site buildings, the indoor vapor concern was considered and evaluated. There is an on-Site Garage that is located cross-gradient to the plume with VOCs. This garage has an office on the eastern side of this structure. The EPA OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance), dated November 2002, was used to asses the possible indoor air pathway along with the Connecticut RSR groundwater criteria.

With regard to this building, monitoring wells MW-S-3 (upgradient) to the south, MW-1S (crossgradient) to the west and MW-4S downgradient and north were used for the evaluation. MW-102S (crossgradient) to the east was also reviewed, but the only VOC detected was one J-flagged (estimated) acetone value and the SVOC bis-(2-ethylhexyl)phthalate, which is not considered sufficiently volatile per Table 1 of the Subsurface Vapor Intrusion Guidance. Therefore, there are no VOC affects to the west of the building. Of these monitoring wells, 1S is the well most affected by VOCs. Of the detected VOCs, only benzene was detected above its target groundwater concentration of 5 ppb in Table 2C of the guidance document. In the upgradient well S-3, benzene has never been detected above 5 ppb. In downgradient well 4S, benzene has not been detected above 5 ppb since June 15, 2004 and the highest benzene concentration detected in this well was 6.39 ppb on August 12, 2003.

This office is located cross-gradient to the plume with VOCs, is not located over the plume and an immediately upgradient well has not had VOCs detected above guidance criteria since the MNA sampling started in 2003. The cross gradient and downgradient wells are only slightly above or are below the EPA guidance criteria. In addition, the Connecticut RSR groundwater criteria for the indoor air pathway were reviewed. The Connecticut criteria are less stringent than the Subsurface Vapor Intrusion Guidance. None of the VOCs in these wells exceed the Connecticut RSR proposed GWVC criteria for residential or industrial/commercial settings. For benzene, the Connecticut RSR proposed GWVC criteria for residential is 130 ug/l and for industrial/commercial settings it is 310 ug/l. Based on the Site conditions and guidance, the vapor intrusion pathway does not appear to be a concern for the on-Site office building. The groundwater flow direction and data do not suggest this will become an issue in the future, but if a change in the groundwater flow direction occurs or VOCs are detected in the upgradient well, such conditions would warrant further attention. Therefore, no changes in exposure pathways have occurred that would affect the protectiveness of the remedy.

A copy of the Vapor Intrusion Pathway Summary Page and tables are attached.

## VII. VAPOR INTRUSION PATHWAY SUMMARY PAGE

**Facility Name:** Barkhamsted Landfill Transfer Station Office,

**Facility Address:** Regional Refuse Disposal District No. 1
31 New Hartford Road
Pleasant Valley, CT 06063

***Primary Screening Summary***

☐ *Q1: Constituents of concern Identified?*

__X__ *Yes*

____ *No* (If NO, skip to the conclusion section below and check NO to indicate the pathway is *incomplete.)*

☐ *Q2: Currently inhabited buildings near subsurface contamination?*

__X__ *Yes*

____ *No*

*Areas of future concern near subsurface contamination?*

__X__ *Yes*

____ *No* (If NO, skip to the conclusion section below and check NO to indicate the pathway is *incomplete.)*

☐ *Q3: Immediate Actions Warranted?*

____ *Yes*

__X__ *No*

***Secondary Screening Summary***

☐ *Vapor source identified:*

__X__ *Groundwater*

____ *Soil*

____ *Insufficient data*

☐ *Indoor air data available?*

____ *Yes*

__X__ *No*

☐ *Indoor air concentrations exceed target levels?*

____ *Yes* Not applicable.

____ *No*

☐ *Subsurface data evaluation: (Circle appropriate answers below)*

| Medium | Q4 Levels Exceeded? | Q5 Levels Exceeded? | Data Indicates Pathway is Complete? |
|---|---|---|---|
| Groundwater | YES / NO / NA / INS | YES* / NO / NA / INS | YES / NO / INS |
| Soil Gas | YES / NO / NA / INS | YES / NO / NA / INS | YES / NO / INS |

* In only one cross to downgradient well (MW-15).

NA = not applicable
INS = insufficient data available to make a determination

***Site-Specific Summary***

☐ *Have the nature and extent of subsurface contamination, potential preferential pathways and overlying building characteristics been adequately characterized to identify the most-likely-to-be-impacted buildings?*

X *Yes*

_____ *No*

_____ *N/A*

EPA recommends that if a model was used, it be an appropriate and applicable model that represents the conceptual site model. If other means were used, document how you determined the potentially most impacted areas to sample. EPA recommends that predictive modeling can be used to support Current Human Exposures Under Control EI determinations without confirmatory sampling to support this determination. Current Human Exposures Under Control EI determinations are intended to reflect a reasonable conclusion by EPA or the State that current human exposures are under control with regard to the vapor intrusion pathway and current land use conditions. Therefore, if conducting evaluation for an EI determination, document that the **Pathway is Incomplete** and/or does not pose an unacceptable risk to human health for EI determinations.

☐ *Are you making an EI determination based on modeling and does the model prediction indicate that determination is expected to be adequately protective to support Current Human Exposures Under Control EI determinations?*

_____ *Yes*

_____ *No*

X *N/A*

☐ *Do subslab vapor concentrations exceed target levels?*

_____ *Yes*

_____ *No*

X *N/A*

☐ *Do indoor air concentrations exceed target levels?*

_____ *Yes*     Not applicable.

_____ *No*

**Conclusion**

**Is there a Complete Pathway for subsurface vapor intrusion to indoor air?**

Below, check the appropriate conclusion for the Subsurface Vapor to Indoor Air Pathway evaluation and attach supporting documentation as well as a map of the facility.

__X__ NO - the "Subsurface Vapor Intrusion to Indoor Air Pathway" has been verified to be incomplete for the __Barkhamsted Transfer Station Office.__ facility, EPA ID #_____________, located at __Barkhamsted, CT__. This determination is based on a review of site information, as suggested in this guidance, check as appropriate:

- __X__ for current and reasonably expected conditions, or
- _____ based on performance monitoring evaluations for engineered exposure controls. This determination may be re-evaluated, where appropriate, when the Agency/State becomes aware of any significant changes at the facility.

_____ YES –The "Subsurface Vapor to Indoor Air Pathway" is Complete. Engineered controls, avoidance actions, or removal actions taken include: _____________

_____ UNKNOWN - More information is needed to make a determination.

**Locations where References may be found:**

__Barkhamsted Five-Year Review Report - 2008.__

**Contact telephone and e-mail numbers:**

**(name)** ________________________

**(phone #)** ________________________

**(e-mail)** ________________________

Table 1: Question 1 Summary Sheet.

| CAS No. | Chemical | Is Chemical Sufficiently Toxic? [1] | Is Chemical Sufficiently Volatile? [2] | Check Here if Known or Reasonably Suspected To Be Present [3] |
|---|---|---|---|---|
| 83329 | Acenaphthene | YES | YES | |
| 75070 | Acetaldehyde | YES | YES | |
| 67641 | Acetone | YES | YES | |
| 75058 | Acetonitrile | YES | YES | |
| 98862 | Acetophenone | YES | YES | |
| 107028 | Acrolein | YES | YES | |
| 107131 | Acrylonitrile | YES | YES | |
| 309002 | Aldrin | YES | YES | |
| 319846 | alpha-HCH (alpha-BHC) | YES | YES | |
| 62533 | Aniline | YES | NO | NA |
| 120127 | Anthracene | NO | YES | NA |
| 56553 | Benz(a)anthracene | YES | NO | NA |
| 100527 | Benzaldehyde | YES | YES | |
| 71432 | Benzene | YES | YES | X |
| 50328 | Benzo(a)pyrene | YES | NO | NA |
| 205992 | Benzo(b)fluoranthene | YES | YES | |
| 207089 | Benzo(k)fluoranthene | NO | NO | NA |
| 65850 | Benzoic Acid | NO | NO | NA |
| 100516 | Benzyl alcohol | YES | NO | NA |
| 100447 | Benzylchloride | YES | YES | |
| 91587 | beta-Chloronaphthalene | YES | YES | |
| 319857 | beta-HCH (beta-BHC) | YES | NO | NA |
| 92524 | Biphenyl | YES | YES | |
| 111444 | Bis(2-chloroethyl)ether | YES | YES | |
| 108601 | Bis(2-chloroisopropyl)ether | YES | YES | |
| 117817 | Bis(2-ethythexyl)phthalate | NO | NO | NA |
| 542881 | Bis(chloromethyl)ether | YES | YES | |
| 75274 | Bromodichloromethane | YES | YES | |
| 75252 | Bromoform | YES | YES | |
| 106990 | 1,3-Butadiene | YES | YES | |
| 71363 | Butanol | YES | NO | NA |
| 85687 | Butyl benzyl phthalate | NO | NO | NA |
| 86748 | Carbazole | YES | NO | NA |
| 75150 | Carbon disulfide | YES | YES | |
| 56235 | Carbon tetrachloride | YES | YES | |
| 57749 | Chlordane | YES | YES | |
| 126998 | 2-Chloro-1,3-butadiene (chloroprene) | YES | YES | |
| 108907 | Chlorobenzene | YES | YES | |
| 109693 | 1-Chlorobutane | YES | YES | |
| 124481 | Chlorodibromomethane | YES | YES | |
| 75456 | Chlorodifluoromethane | YES | YES | |
| 75003 | Chloroethane (ethyl chloride) | YES | YES | X |
| 67663 | Chloroform | YES | YES | |
| 95578 | 2-Chlorophenol | YES | YES | |
| 75296 | 2-Chloropropane | YES | YES | |
| 218019 | Chrysene | YES | YES | |
| 156592 | cis-1,2-Dichloroethylene | YES | YES | |
| 123739 | Crotonaldehyde (2-butenal) | YES | YES | |
| 98828 | Cumene | YES | YES | |
| 72548 | DDD | YES | NO | NA |
| 72559 | DDE | YES | YES | |
| 50293 | DDT | YES | NO | NA |
| 53703 | Dibenz(a,h)anthracene | YES | NO | NA |
| 132649 | Dibenzofuran | YES | YES | |
| 96128 | 1,2-Dibromo-3-chloropropane | YES | YES | |
| 106934 | 1,2-Dibromoethane (ethylene dibromide) | YES | YES | |
| 541731 | 1,3-Dichlorobenzene | YES | YES | |
| 95501 | 1,2-Dichlorobenzene | YES | YES | |
| 106467 | 1,4-Dichlorobenzene | YES | YES | X |
| 91941 | 3,3-Dichlorobenzidine | YES | NO | NA |
| 75718 | Dichlorodifluoromethane | YES | YES | |

**Table 1: Question 1 Summary Sheet**

| CAS No. | Chemical | Is Chemical Sufficiently Toxic? [1] | Is Chemical Sufficiently Volatile? [2] | Check Here if Known or Reasonably Suspected To Be Present [3] |
|---|---|---|---|---|
| 75343 | 1,1-Dichloroethane | YES | YES | |
| 107062 | 1,2-Dichloroethane | YES | YES | |
| 75354 | 1,1-Dichloroethylene | YES | YES | |
| 120832 | 2,4-Dichlorophenol | YES | NO | NA |
| 78875 | 1,2-Dichloropropane | YES | YES | |
| 542756 | 1,3-Dichloropropene | YES | YES | |
| 60571 | Dieldrin | YES | YES | |
| 84662 | Diethylphthalate | YES | NO | NA |
| 105679 | 2,4-Dimethylphenol | YES | NO | NA X |
| 131113 | Dimethylphthalate | NA | NO | NA |
| 84742 | Di-n-butyl phthalate | NO | NO | NA |
| 534521 | 4,6-Dinitro-2-methylphenol (4,6-dinitro-o-cresol) | YES | NO | NA |
| 51285 | 2,4-Dinitrophenol | YES | NO | NA |
| 121142 | 2,4-Dinitrotoluene | YES | NO | NA |
| 606202 | 2,6-Dinitrotoluene | YES | NO | NA |
| 117840 | Di-n-octyl phthalate | NO | YES | NA |
| 115297 | Endosulfan | YES | YES | |
| 72208 | Endrin | YES | NO | NA |
| 106898 | Epichlorohydrin | YES | YES | |
| 60297 | Ethyl ether | YES | YES | |
| 141786 | Ethylacetate | YES | YES | |
| 100414 | Ethylbenzene | YES | YES | |
| 75218 | Ethylene oxide | YES | YES | |
| 97632 | Ethylmethacrylate | YES | YES | |
| 206440 | Fluoranthene | NO | YES | NA |
| 86737 | Fluorene | YES | YES | |
| 110009 | Furan | YES | YES | |
| 58899 | gamma-HCH (Lindane) | YES | YES | |
| 76448 | Heptachlor | YES | YES | |
| 1024573 | Heptachlor epoxide | YES | NO | NA |
| 87683 | Hexachloro-1,3-butadiene | YES | YES | |
| 118741 | Hexachlorobenzene | YES | YES | |
| 77474 | Hexachlorocyclopentadiene | YES | YES | |
| 67721 | Hexachloroethane | YES | YES | |
| 110543 | Hexane | YES | YES | |
| 74908 | Hydrogen cyanide | YES | YES | |
| 193395 | Indeno(1,2,3-cd)pyrene | NO | NO | NA |
| 78831 | Isobutanol | YES | YES | |
| 78591 | Isophorone | YES | NO | NA |
| 7439976 | Mercury (elemental) | YES | YES | |
| 126987 | Methacrylonitrile | YES | YES | |
| 72435 | Methoxychlor | YES | YES | |
| 79209 | Methyl acetate | YES | YES | |
| 96333 | Methyl acrylate | YES | YES | |
| 74839 | Methyl bromide | YES | YES | |
| 74873 | Methyl chloride (chloromethane) | YES | YES | |
| 108872 | Methylcyclohexane | YES | YES | |
| 74953 | Methylene bromide | YES | YES | |
| 75092 | Methylene chloride | YES | YES | |
| 78933 | Methylethylketone (2-butanone) | YES | YES | |
| 108101 | Methylisobutylketone | YES | YES | |
| 80626 | Methylmethacrylate | YES | YES | |
| 91576 | 2-Methylnaphthalene | YES | YES | |
| 108394 | 3-Methylphenol (m-cresol) | YES | NO | NA |
| 95487 | 2-Methylphenol (o-cresol) | YES | NO | NA |
| 106455 | 4-Methylphenol (p-cresol) | YES | NO | NA |
| 99081 | m-Nitrotoluene | YES | NO | NA |
| 1634044 | MTBE | YES | YES | |
| 108383 | m-Xylene | YES | YES | |
| 91203 | Naphthalene | YES | YES | |
| 104518 | n-Butylbenzene | YES | YES | |

Table 1: Question 1 Summary Sheet.

| CAS No. | Chemical | Is Chemical Sufficiently Toxic? [1] | Is Chemical Sufficiently Volatile? [2] | Check Here if Known or Reasonably Suspected To Be Present [3] |
|---|---|---|---|---|
| 98953 | Nitrobenzene | YES | YES | |
| 100027 | 4-Nitrophenol | YES | NO | NA |
| 79469 | 2-Nitropropane | YES | YES | |
| 924163 | N-Nitroso-di-n-butylamine | YES | YES | |
| 621647 | N-Nitrosodi-n-propylamine | YES | NO | NA |
| 86306 | N-Nitrosodiphenylamine | YES | NO | NA |
| 103651 | n-Propylbenzene | YES | YES | |
| 88722 | o-Nitrotoluene | YES | YES | |
| 95476 | o-Xylene | YES | YES | |
| 106478 | p-Chloroaniline | YES | NO | NA |
| 87865 | Pentachlorophenol | YES | NO | NA |
| 108952 | Phenol | YES | NO | NA |
| 99990 | p-Nitrotoluene | YES | NO | NA |
| 106423 | p-Xylene | YES | YES | |
| 129000 | Pyrene | YES | YES | |
| 110861 | Pyridine | YES | NO | NA |
| 135988 | sec-Butylbenzene | YES | YES | |
| 100425 | Styrene | YES | YES | |
| 98066 | tert-Butylbenzene | YES | YES | |
| 630206 | 1,1,1,2-Tetrachloroethane | YES | YES | |
| 79345 | 1,1,2,2-Tetrachloroethane | YES | YES | |
| 127184 | Tetrachloroethylene | YES | YES | |
| 108883 | Toluene | YES | YES | X |
| 8001352 | Toxaphene | YES | NO | NA |
| 156605 | trans-1,2-Dichloroethylene | YES | YES | |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | YES | YES | |
| 120821 | 1,2,4-Trichlorobenzene | YES | YES | |
| 79005 | 1,1,2-Trichloroethane | YES | YES | |
| 71556 | 1,1,1-Trichloroethane | YES | YES | |
| 79016 | Trichloroethylene | YES | YES | |
| 75694 | Trichlorofluoromethane | YES | YES | |
| 95954 | 2,4,5-Trichlorophenol | YES | NO | NA |
| 88062 | 2,4,6-Trichlorophenol | YES | NO | NA |
| 96184 | 1,2,3-Trichloropropane | YES | YES | |
| 95636 | 1,2,4-Trimethylbenzene | YES | YES | |
| 108678 | 1,3,5-Trimethylbenzene | YES | YES | |
| 108054 | Vinyl acetate | YES | YES | |
| 75014 | Vinyl chloride (chloroethene) | YES | YES | |

[1] A chemical is considered sufficiently toxic if the vapor concentration of the pure component (see Appendix D) poses an incremental lifetime cancer risk greater than $10^{-6}$ or a non-cancer hazard index greater than 1.

[2] A chemical is considered sufficiently volatile if its Henry's Law Constant is $1 \times 10^{-5}$ atm-m$^3$/mol or greater (US EPA, 1991).

[3] Users should check off compounds that meet the criteria for toxicity and volatility and are known or reasonably suspected to be present.

Table 2a: Question 4 Generic Screening Levels and Summary Sheet [1]
Risk = 1 x $10^{-4}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Prescribed Risk Level and the Target Hazard Index [R=$10^{-4}$, HI=1] $C_{target}$ (ug/m$^3$) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil\text{-}gas}$ (ug/m$^3$) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil\text{-}gas}$ (ug/m$^3$) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 83329 | Acenaphthene | X | NC | 2.1E+02 | 3.3E+01 | | 2.1E+03 | 3.3E+02 | | 2.1E+04 | 3.3E+03 | | ** | |
| 75070 | Acetaldehyde | | NC | 9.0E+00 | 5.0E+00 | | 9.0E+01 | 5.0E+01 | | 9.0E+02 | 5.0E+02 | | 2.8E+03 | |
| 67641 | Acetone | X | NC | 3.5E+02 | 1.5E+02 | | 3.5E+03 | 1.5E+03 | | 3.5E+04 | 1.5E+04 | | 2.2E+05 | |
| 75058 | Acetonitrile | | NC | 6.0E+01 | 3.6E+01 | | 6.0E+02 | 3.6E+02 | | 6.0E+03 | 3.6E+03 | | 4.2E+04 | |
| 98862 | Acetophenone | X | NC | 3.5E+02 | 7.1E+01 | | 3.5E+03 | 7.1E+02 | | 3.5E+04 | 7.1E+03 | | 8.0E+05 | |
| 107028 | Acrolein | | NC | 2.0E-02 | 8.7E-03 | | 2.0E-01 | 8.7E-02 | | 2.0E+00 | 8.7E-01 | | 4.0E+00 | |
| 107131 | Acrylonitrile | | NC | 2.0E+00 | 9.2E-01 | | 2.0E+01 | 9.2E+00 | | 2.0E+02 | 9.2E+01 | | 4.7E+02 | |
| 309002 | Aldrin | | C | 5.0E-02 | 3.3E-03 | | 5.0E-01 | 3.3E-02 | | 5.0E+00 | 3.3E-01 | | 7.1E+00 | |
| 319846 | alpha-HCH (alpha-BHC) | | C | 1.4E-01 | 1.1E-02 | | 1.4E+00 | 1.1E-01 | | 1.4E+01 | 1.1E+00 | | 3.1E+02 | |
| 100527 | Benzaldehyde | X | NC | 3.5E+02 | 8.1E+01 | | 3.5E+03 | 8.1E+02 | | 3.5E+04 | 8.1E+03 | | 3.6E+05 | |
| 71432 | Benzene | | C | 3.1E+01 | 9.8E+00 | | 3.1E+02 | 9.8E+01 | | 3.1E+03 | 9.8E+02 | | 1.4E+02 | 13.7 ug/L * – highest conc. |
| 205992 | Benzo(b)fluoranthene | X | C | 1.2E+00 | 1.1E-01 | | ** | ** | | ** | ** | | ** | |
| 100447 | Benzylchloride | X | C | 5.0E+00 | 9.7E-01 | | 5.0E+01 | 9.7E+00 | | 5.0E+02 | 9.7E+01 | | 3.0E+02 | |
| 91587 | beta-Chloronaphthalene | X | NC | 2.8E+02 | 4.2E+01 | | 2.8E+03 | 4.2E+02 | | 2.8E+04 | 4.2E+03 | | ** | |
| 92524 | Biphenyl | X | NC | 1.8E+02 | 2.8E+01 | | 1.8E+03 | 2.8E+02 | | 1.8E+04 | 2.8E+03 | | ** | |
| 111444 | Bis(2-chloroethyl)ether | | C | 7.4E-01 | 1.3E-01 | | 7.4E+00 | 1.3E+00 | | 7.4E+01 | 1.3E+01 | | 1.0E+03 | |
| 108601 | Bis(2-chloroisopropyl)ether | | C | 2.4E+01 | 3.5E+00 | | 2.4E+02 | 3.5E+01 | | 2.4E+03 | 3.5E+02 | | 5.1E+03 | |
| 542881 | Bis(chloromethyl)ether | | C | 3.9E-03 | 8.4E-04 | | 3.9E-02 | 8.4E-03 | | 3.9E-01 | 8.4E-02 | | 4.5E-01 | |
| 75274 | Bromodichloromethane | X | C | 1.4E+01 | 2.1E+00 | | 1.4E+02 | 2.1E+01 | | 1.4E+03 | 2.1E+02 | | 2.1E+02 | |
| 75252 | Bromoform | | C | 2.2E+02 | 2.1E+01 | | 2.2E+03 | 2.1E+02 | | 2.2E+04 | 2.1E+03 | | 8.3E-01 | |
| 106990 | 1,3-Butadiene | | C | 8.7E-01 | 3.9E-01 | | 8.7E+00 | 3.9E+00 | | 8.7E+01 | 3.9E+01 | | 2.9E-01 | |
| 75150 | Carbon disulfide | | NC | 7.0E+02 | 2.2E+02 | | 7.0E+03 | 2.2E+03 | | 7.0E+04 | 2.2E+04 | | 5.6E+02 | |
| 56235 | Carbon tetrachloride | | C | 1.6E+01 | 2.6E+00 | | 1.6E+02 | 2.6E+01 | | 1.6E+03 | 2.6E+02 | | 1.3E+01 | |
| 57749 | Chlordane | | NC | 7.0E-01 | 4.2E-02 | | 7.0E+00 | 4.2E-01 | | 7.0E+01 | 4.2E+00 | | ** | |
| 126998 | 2-Chloro-1,3-butadiene (chloroprene) | | NC | 7.0E+00 | 1.9E+00 | | 7.0E+01 | 1.9E+01 | | 7.0E+02 | 1.9E+02 | | 1.4E+01 | |
| 108907 | Chlorobenzene | | NC | 6.0E+01 | 1.3E+01 | | 6.0E+02 | 1.3E+02 | | 6.0E+03 | 1.3E+03 | | 3.9E+02 | |
| 109693 | 1-Chlorobutane | X | NC | 1.4E+03 | 3.7E+02 | | 1.4E+04 | 3.7E+03 | | 1.4E+05 | 3.7E+04 | | 2.0E+03 | |
| 124481 | Chlorodibromomethane | X | C | 1.0E+01 | 1.2E+00 | | 1.0E+02 | 1.2E+01 | | 1.0E+03 | 1.2E+02 | | 3.2E+02 | |
| 75456 | Chlorodifluoromethane | | NC | 5.0E+04 | 1.4E+04 | | 5.0E+05 | 1.4E+05 | | ** | ** | | ** | |
| 75003 | Chloroethane (ethyl chloride) | | NC | 1.0E+04 | 3.8E+03 | | 1.0E+05 | 3.8E+04 | | 1.0E+06 | 3.8E+05 | | 2.8E+04 | 9.17 ug/L |
| 67663 | Chloroform | | C | 1.1E+01 | 2.2E+00 | | 1.1E+02 | 2.2E+01 | | 1.1E+03 | 2.2E+02 | | 8.0E+01 † | |
| 95578 | 2-Chlorophenol | X | NC | 1.8E+01 | 3.3E+00 | | 1.8E+02 | 3.3E+01 | | 1.8E+03 | 3.3E+02 | | 1.1E+03 | |
| 75296 | 2-Chloropropane | | NC | 1.0E+02 | 3.2E+01 | | 1.0E+03 | 3.2E+02 | | 1.0E+04 | 3.2E+03 | | 1.7E+02 | |
| 218019 | Chrysene | X | * | * | * | | * | * | | * | * | | * | |
| 156592 | cis-1,2-Dichloroethylene | X | NC | 3.5E+01 | 8.8E+00 | | 3.5E+02 | 8.8E+01 | | 3.5E+03 | 8.8E+02 | | 2.1E+02 | |
| 123739 | Crotonaldehyde (2-butenal) | X | C | 4.5E-01 | 1.6E-01 | | 4.5E+00 | 1.6E+00 | | 4.5E+01 | 1.6E+01 | | 5.6E+02 | |
| 98828 | Cumene | | NC | 4.0E+02 | 8.1E+01 | | 4.0E+03 | 8.1E+02 | | 4.0E+04 | 8.1E+03 | | 8.4E+00 | |

* The highest concentration is noted for wells MW-1S, S-3 and 4S.

Table 2a: Question 4 Generic Screening Levels and Summary Sheet [1]
Risk = 1 x $10^{-4}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Prescribed Risk Level and the Target Hazard Index [R=$10^{-4}$, HI=1) $C_{target}$ (ug/m$^3$) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m$^3$) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m$^3$) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 72559 | DDE | X | C | 2.5E+00 | 1.9E-01 | | 2.5E+01 | 1.9E+00 | | ** | ** | | ** | |
| 132649 | Dibenzofuran | X | NC | 1.4E+01 | 2.0E+00 | | 1.4E+02 | 2.0E+01 | | 1.4E+03 | 2.0E+02 | | ** | |
| 96128 | 1,2-Dibromo-3-chloropropane | | NC | 2.0E-01 | 2.1E-02 | | 2.0E+00 | 2.1E-01 | | 2.0E+01 | 2.1E+00 | | 3.3E+01 | |
| 106934 | 1,2-Dibromoethane (ethylene dibromide) | | NC | 2.0E-01 | 2.6E-02 | | 2.0E+00 | 2.6E-01 | | 2.0E+01 | 2.6E+00 | | 6.6E+00 | |
| 541731 | 1,3-Dichlorobenzene | X | NC | 1.1E+02 | 1.7E+01 | | 1.1E+03 | 1.7E+02 | | 1.1E+04 | 1.7E+03 | | 8.3E+02 | |
| 95501 | 1,2-Dichlorobenzene | | NC | 2.0E+02 | 3.3E+01 | | 2.0E+03 | 3.3E+02 | | 2.0E+04 | 3.3E+03 | | 2.6E+03 | |
| 106467 | 1,4-Dichlorobenzene | | NC | 8.0E+02 | 1.3E+02 | | 8.0E+03 | 1.3E+03 | | 8.0E+04 | 1.3E+04 | | 8.2E+03 | 6.1 ug/L |
| 75718 | Dichlorodifluoromethane | | NC | 2.0E+02 | 4.0E+01 | | 2.0E+03 | 4.0E+02 | | 2.0E+04 | 4.0E+03 | | 1.4E+01 | |
| 75343 | 1,1-Dichloroethane | | NC | 5.0E+02 | 1.2E+02 | | 5.0E+03 | 1.2E+03 | | 5.0E+04 | 1.2E+04 | | 2.2E+03 | |
| 107062 | 1,2-Dichloroethane | | C | 9.4E+00 | 2.3E+00 | | 9.4E+01 | 2.3E+01 | | 9.4E+02 | 2.3E+02 | | 2.3E+02 | |
| 75354 | 1,1-Dichloroethylene | | NC | 2.0E+02 | 5.0E+01 | | 2.0E+03 | 5.0E+02 | | 2.0E+04 | 5.0E+03 | | 1.8E+02 | |
| 78875 | 1,2-Dichloropropane | | NC | 4.0E+00 | 8.7E-01 | | 4.0E+01 | 8.7E+00 | | 4.0E+02 | 8.7E+01 | | 3.5E+01 | |
| 542756 | 1,3-Dichloropropene | | NC | 2.0E+01 | 4.4E+00 | | 2.0E+02 | 4.4E+01 | | 2.0E+03 | 4.4E+02 | | 2.8E+01 | |
| 60571 | Dieldrin | | C | 5.3E-02 | 3.4E-03 | | 5.3E-01 | 3.4E-02 | | 5.3E+00 | 3.4E-01 | | 8.6E+01 | |
| 115297 | Endosulfan | X | NC | 2.1E+01 | 1.3E+00 | | 2.1E+02 | 1.3E+01 | | ** | ** | | ** | |
| 106898 | Epichlorohydrin | | NC | 1.0E+00 | 2.6E-01 | | 1.0E+01 | 2.6E+00 | | 1.0E+02 | 2.6E+01 | | 8.0E+02 | |
| 60297 | Ethyl ether | X | NC | 7.0E+02 | 2.3E+02 | | 7.0E+03 | 2.3E+03 | | 7.0E+04 | 2.3E+04 | | 5.2E+02 | |
| 141786 | Ethylacetate | X | NC | 3.2E+03 | 8.7E+02 | | 3.2E+04 | 8.7E+03 | | 3.2E+05 | 8.7E+04 | | 5.6E+05 | |
| 100414 | Ethylbenzene | | C | 2.2E+02 | 5.1E+01 | | 2.2E+03 | 5.1E+02 | | 2.2E+04 | 5.1E+03 | | 7.0E+02 [†] | |
| 75218 | Ethylene oxide | | C | 2.4E+00 | 1.4E+00 | | 2.4E+01 | 1.4E+01 | | 2.4E+02 | 1.4E+02 | | 1.1E+02 | |
| 97632 | Ethylmethacrylate | X | NC | 3.2E+02 | 6.8E+01 | | 3.2E+03 | 6.8E+02 | | 3.2E+04 | 6.8E+03 | | 9.1E+03 | |
| 86737 | Fluorene | X | NC | 1.4E+02 | 2.1E+01 | | 1.4E+03 | 2.1E+02 | | ** | ** | | ** | |
| 110009 | Furan | X | NC | 3.5E+00 | 1.3E+00 | | 3.5E+01 | 1.3E+01 | | 3.5E+02 | 1.3E+02 | | 1.6E+01 | |
| 58899 | gamma-HCH (Lindane) | X | C | 6.6E-01 | 5.5E-02 | | 6.6E+00 | 5.5E-01 | | 6.6E+01 | 5.5E+00 | | 1.1E+03 | |
| 76448 | Heptachlor | | C | 1.9E-01 | 1.2E-02 | | 1.9E+00 | 1.2E-01 | | 1.9E+01 | 1.2E+00 | | 4.0E-01 [†] | |
| 87683 | Hexachloro-1,3-butadiene | | C | 1.1E+01 | 1.0E+00 | | 1.1E+02 | 1.0E+01 | | 1.1E+03 | 1.0E+02 | | 3.3E+01 | |
| 118741 | Hexachlorobenzene | | C | 5.3E-01 | 4.5E-02 | | 5.3E+00 | 4.5E-01 | | 5.3E+01 | 4.5E+00 | | ** | |
| 77474 | Hexachlorocyclopentadiene | | NC | 2.0E-01 | 1.8E-02 | | 2.0E+00 | 1.8E-01 | | 2.0E+01 | 1.8E+00 | | 5.0E+01 [†] | |
| 67721 | Hexachloroethane | | C | 6.1E+01 | 6.3E+00 | | 6.1E+02 | 6.3E+01 | | 6.1E+03 | 6.3E+02 | | 3.8E+02 | |
| 110543 | Hexane | | NC | 2.0E+02 | 5.7E+01 | | 2.0E+03 | 5.7E+02 | | 2.0E+04 | 5.7E+03 | | 2.9E+00 | |
| 74908 | Hydrogen cyanide | | NC | 3.0E+00 | 2.7E+00 | | 3.0E+01 | 2.7E+01 | | 3.0E+02 | 2.7E+02 | | 5.5E+02 | |
| 78831 | Isobutanol | X | NC | 1.1E+03 | 3.5E+02 | | 1.1E+04 | 3.5E+03 | | 1.1E+05 | 3.5E+04 | | 2.2E+06 | |
| 7439976 | Mercury (elemental) | | NC | 3.0E-01 | 3.7E-02 | | 3.0E+00 | 3.7E-01 | | 3.0E+01 | 3.7E+00 | | 6.8E-01 | |
| 126987 | Methacrylonitrile | | NC | 7.0E-01 | 2.6E-01 | | 7.0E+00 | 2.6E+00 | | 7.0E+01 | 2.6E+01 | | 6.9E+01 | |
| 72435 | Methoxychlor | X | NC | 1.8E+01 | 1.2E+00 | | ** | ** | | ** | ** | | ** | |
| 79209 | Methyl acetate | X | NC | 3.5E+03 | 1.2E+03 | | 3.5E+04 | 1.2E+04 | | 3.5E+05 | 1.2E+05 | | 7.2E+05 | |
| 96333 | Methyl acrylate | X | NC | 1.1E+02 | 3.0E+01 | | 1.1E+03 | 3.0E+02 | | 1.1E+04 | 3.0E+03 | | 1.4E+04 | |

**Table 2a: Question 4 Generic Screening Levels and Summary Sheet** [1]

Risk = 1 x $10^{-4}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Prescribed Risk Level and the Target Hazard Index [R=$10^{-4}$, HI=1] $C_{target}$ (ug/m³) | $C_{target}$ (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m³) | $C_{soil-gas}$ (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m³) | $C_{soil-gas}$ (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 74839 | Methyl bromide | | NC | 5.0E+00 | 1.3E+00 | | 5.0E+01 | 1.3E+01 | | 5.0E+02 | 1.3E+02 | | 2.0E+01 | |
| 74873 | Methyl chloride (chloromethane) | | NC | 9.0E+01 | 4.4E+01 | | 9.0E+02 | 4.4E+02 | | 9.0E+03 | 4.4E+03 | | 2.5E+02 | |
| 108872 | Methylcyclohexane | | NC | 3.0E+03 | 7.5E+02 | | 3.0E+04 | 7.5E+03 | | 3.0E+05 | 7.5E+04 | | 7.1E+02 | |
| 74953 | Methylene bromide | X | NC | 3.5E+01 | 4.9E+00 | | 3.5E+02 | 4.9E+01 | | 3.5E+03 | 4.9E+02 | | 9.9E+02 | |
| 75092 | Methylene chloride | | C | 5.2E+02 | 1.5E+02 | | 5.2E+03 | 1.5E+03 | | 5.2E+04 | 1.5E+04 | | 5.8E+03 | |
| 78933 | Methylethylketone (2-butanone) | | NC | 1.0E+03 | 3.4E+02 | | 1.0E+04 | 3.4E+03 | | 1.0E+05 | 3.4E+04 | | 4.4E+05 | |
| 108101 | Methylisobutylketone | | NC | 8.0E+01 | 2.0E+01 | | 8.0E+02 | 2.0E+02 | | 8.0E+03 | 2.0E+03 | | 1.4E+04 | |
| 80626 | Methylmethacrylate | | NC | 7.0E+02 | 1.7E+02 | | 7.0E+03 | 1.7E+03 | | 7.0E+04 | 1.7E+04 | | 5.1E+04 | |
| 91576 | 2-Methylnaphthalene | X | NC | 7.0E+01 | 1.2E+01 | | 7.0E+02 | 1.2E+02 | | 7.0E+03 | 1.2E+03 | | 3.3E+03 | |
| 1634044 | MTBE | | NC | 3.0E+03 | 8.3E+02 | | 3.0E+04 | 8.3E+03 | | 3.0E+05 | 8.3E+04 | | 1.2E+05 | |
| 108383 | m-Xylene | X | NC | 7.0E+03 | 1.6E+03 | | 7.0E+04 | 1.6E+04 | | 7.0E+05 | 1.6E+05 | | 2.3E+04 | |
| 91203 | Naphthalene | | NC | 3.0E+00 | 5.7E-01 | | 3.0E+01 | 5.7E+00 | | 3.0E+02 | 5.7E+01 | | 1.5E+02 | |
| 104518 | n-Butylbenzene | X | NC | 1.4E+02 | 2.6E+01 | | 1.4E+03 | 2.6E+02 | | 1.4E+04 | 2.6E+03 | | 2.6E+02 | |
| 98953 | Nitrobenzene | | NC | 2.0E+00 | 4.0E-01 | | 2.0E+01 | 4.0E+00 | | 2.0E+02 | 4.0E+01 | | 2.0E+03 | |
| 79469 | 2-Nitropropane | | C | 9.0E-02 | 2.5E-02 | | 9.0E-01 | 2.5E-01 | | 9.0E+00 | 2.5E+00 | | 1.8E+01 | |
| 924163 | N-Nitroso-di-n-butylamine | | C | 1.5E-01 | 2.4E-02 | | 1.5E+00 | 2.4E-01 | | 1.5E+01 | 2.4E+00 | | 1.2E+01 | |
| 103651 | n-Propylbenzene | X | NC | 1.4E+02 | 2.8E+01 | | 1.4E+03 | 2.8E+02 | | 1.4E+04 | 2.8E+03 | | 3.2E+02 | |
| 88722 | o-Nitrotoluene | X | NC | 3.5E+01 | 6.2E+00 | | 3.5E+02 | 6.2E+01 | | 3.5E+03 | 6.2E+02 | | 6.8E+04 | |
| 95476 | o-Xylene | X | NC | 7.0E+03 | 1.6E+03 | | 7.0E+04 | 1.6E+04 | | 7.0E+05 | 1.6E+05 | | 3.3E+04 | |
| 106423 | p-Xylene | X | NC | 7.0E+03 | 1.6E+03 | | 7.0E+04 | 1.6E+04 | | 7.0E+05 | 1.6E+05 | | 2.2E+04 | |
| 129000 | Pyrene | X | NC | 1.1E+02 | 1.3E+01 | | ** | ** | | ** | ** | | ** | |
| 135988 | sec-Butylbenzene | X | NC | 1.4E+02 | 2.6E+01 | | 1.4E+03 | 2.6E+02 | | 1.4E+04 | 2.6E+03 | | 2.5E+02 | |
| 100425 | Styrene | | NC | 1.0E+03 | 2.3E+02 | | 1.0E+04 | 2.3E+03 | | 1.0E+05 | 2.3E+04 | | 8.8E+03 | |
| 98066 | tert-Butylbenzene | X | NC | 1.4E+02 | 2.6E+01 | | 1.4E+03 | 2.6E+02 | | 1.4E+04 | 2.6E+03 | | 2.9E+02 | |
| 630206 | 1,1,1,2-Tetrachloroethane | | C | 3.3E+01 | 4.8E+00 | | 3.3E+02 | 4.8E+01 | | 3.3E+03 | 4.8E+02 | | 3.3E+02 | |
| 79345 | 1,1,2,2-Tetrachloroethane | | C | 4.2E+00 | 6.1E-01 | | 4.2E+01 | 6.1E+00 | | 4.2E+02 | 6.1E+01 | | 3.0E+02 | |
| 127184 | Tetrachloroethylene | | C | 8.1E+01 | 1.2E+01 | | 8.1E+02 | 1.2E+02 | | 8.1E+03 | 1.2E+03 | | 1.1E+02 | |
| 108883 | Toluene | | NC | 4.0E+02 | 1.1E+02 | | 4.0E+03 | 1.1E+03 | | 4.0E+04 | 1.1E+04 | | 1.5E+03 | 12 ug/L |
| 156605 | trans-1,2-Dichloroethylene | X | NC | 7.0E+01 | 1.8E+01 | | 7.0E+02 | 1.8E+02 | | 7.0E+03 | 1.8E+03 | | 1.8E+02 | |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | | NC | 3.0E+04 | 3.9E+03 | | 3.0E+05 | 3.9E+04 | | 3.0E+06 | 3.9E+05 | | 1.5E+03 | |
| 120821 | 1,2,4-Trichlorobenzene | | NC | 2.0E+02 | 2.7E+01 | | 2.0E+03 | 2.7E+02 | | 2.0E+04 | 2.7E+03 | | 3.4E+03 | |
| 79005 | 1,1,2-Trichloroethane | | C | 1.5E+01 | 2.8E+00 | | 1.5E+02 | 2.8E+01 | | 1.5E+03 | 2.8E+02 | | 4.1E+02 | |
| 71556 | 1,1,1-Trichloroethane | | NC | 2.2E+03 | 4.0E+02 | | 2.2E+04 | 4.0E+03 | | 2.2E+05 | 4.0E+04 | | 3.1E+03 | |
| 79016 | Trichloroethylene †† | X | C | 2.2E+00 | 4.1E-01 | | 2.2E+01 | 4.1E+00 | | 2.2E+02 | 4.1E+01 | | 5.3E+00 | |
| 75694 | Trichlorofluoromethane | | NC | 7.0E+02 | 1.2E+02 | | 7.0E+03 | 1.2E+03 | | 7.0E+04 | 1.2E+04 | | 1.8E+02 | |
| 96184 | 1,2,3-Trichloropropane | | NC | 4.9E+00 | 8.1E-01 | | 4.9E+01 | 8.1E+00 | | 4.9E+02 | 8.1E+01 | | 2.9E+02 | |
| 95636 | 1,2,4-Trimethylbenzene | | NC | 6.0E+00 | 1.2E+00 | | 6.0E+01 | 1.2E+01 | | 6.0E+02 | 1.2E+02 | | 2.4E+01 | |

**Table 2a: Question 4 Generic Screening Levels and Summary Sheet [1]**

Risk = $1 \times 10^{-4}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Proscribed Risk Level and the Target Hazard Index [$R=10^{-4}$, HI=1] $C_{target}$ (ug/m³) | $C_{target}$ (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m³) | $C_{soil-gas}$ (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m³) | $C_{soil-gas}$ (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 108678 | 1,3,5-Trimethylbenzene | | NC | 6.0E+00 | 1.2E+00 | | 6.0E+01 | 1.2E+01 | | 6.0E+02 | 1.2E+02 | | 2.5E+01 | |
| 108054 | Vinyl acetate | | NC | 2.0E+02 | 5.7E+01 | | 2.0E+03 | 5.7E+02 | | 2.0E+04 | 5.7E+03 | | 9.6E+03 | |
| 75014 | Vinyl chloride (chloroethene) | | C | 2.8E+01 | 1.1E+01 | | 2.8E+02 | 1.1E+02 | | 2.8E+03 | 1.1E+03 | | 2.5E+01 | |

[1] AF = 0.1 for Shallow Soil Gas Target Concentration
AF = 0.01 for Deep Soil Gas Target Concentration
AF = 0.001 for Groundwater Target Concentration

* Health-based target breathing concentration exceeds maximum possible chemical vapor concentration (pathway incomplete)

** Target soil gas concentration exceeds maximum possible vapor concentration (pathway incomplete)

† The target groundwater concentration is the MCL. (The MCL for chloroform is the MCL for total Trihalomethanes. The MCL listed for m-Xylene, o-Xylene, and p-Xylene is the MCL for total Xylenes.)

†† The target concentration for trichloroethylene is based on the upper bound cancer slope factor identified in EPA's draft risk assessment for trichloroethylene (US EPA, 2001). The slope factor is based on state-of-the-art methodology, however the TCE assessment is still undergoing review. As a result, the slope factor and the target concentration values for TCE may be revised further. (See Appendix D.)

**Table 2b: Question 4 Generic Screening Levels and Summary Sheet [1]**
Risk = 1 x $10^{-5}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Prescribed Risk Level and the Target Hazard Index [R=$10^{-5}$, HI=1] $C_{target}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 83329 | Acenaphthene | X | NC | 2.1E+02 | 3.3E+01 | | 2.1E+03 | 3.3E+02 | | 2.1E+04 | 3.3E+03 | | ** | |
| 75070 | Acetaldehyde | | NC | 9.0E+00 | 5.0E+00 | | 9.0E+01 | 5.0E+01 | | 9.0E+02 | 5.0E+02 | | 2.8E+03 | |
| 67641 | Acetone | X | NC | 3.5E+02 | 1.5E+02 | | 3.5E+03 | 1.5E+03 | | 3.5E+04 | 1.5E+04 | | 2.2E+05 | |
| 75058 | Acetonitrile | | NC | 6.0E+01 | 3.6E+01 | | 6.0E+02 | 3.6E+02 | | 6.0E+03 | 3.6E+03 | | 4.2E+04 | |
| 98862 | Acetophenone | X | NC | 3.5E+02 | 7.1E+01 | | 3.5E+03 | 7.1E+02 | | 3.5E+04 | 7.1E+03 | | 8.0E+05 | |
| 107028 | Acrolein | | NC | 2.0E-02 | 8.7E-03 | | 2.0E-01 | 8.7E-02 | | 2.0E+00 | 8.7E-01 | | 4.0E+00 | |
| 107131 | Acrylonitrile | | C | 3.6E-01 | 1.7E-01 | | 3.6E+00 | 1.7E+00 | | 3.6E+01 | 1.7E+01 | | 8.5E+01 | |
| 309002 | Aldrin | | C | 5.0E-03 | 3.3E-04 | | 5.0E-02 | 3.3E-03 | | 5.0E-01 | 3.3E-02 | | 7.1E-01 | |
| 319846 | alpha-HCH (alpha-BHC) | | C | 1.4E-02 | 1.1E-03 | | 1.4E-01 | 1.1E-02 | | 1.4E+00 | 1.1E-01 | | 3.1E+01 | |
| 100527 | Benzaldehyde | X | NC | 3.5E+02 | 8.1E+01 | | 3.5E+03 | 8.1E+02 | | 3.5E+04 | 8.1E+03 | | 3.6E+05 | |
| 71432 | Benzene | | C | 3.1E+00 | 9.8E-01 | | 3.1E+01 | 9.8E+00 | | 3.1E+02 | 9.8E+01 | | 1.4E+01 | 13.7 ug/L* |
| 205992 | Benzo(b)fluoranthene | X | C | 1.2E-01 | 1.1E-02 | | 1.2E+00 | 1.1E-01 | | ** | ** | | ** | |
| 100447 | Benzylchloride | X | C | 5.0E-01 | 9.7E-02 | | 5.0E+00 | 9.7E-01 | | 5.0E+01 | 9.7E+00 | | 3.0E+01 | |
| 91587 | beta-Chloronaphthalene | X | NC | 2.8E+02 | 4.2E+01 | | 2.8E+03 | 4.2E+02 | | 2.8E+04 | 4.2E+03 | | ** | |
| 92524 | Biphenyl | X | NC | 1.8E+02 | 2.8E+01 | | 1.8E+03 | 2.8E+02 | | 1.8E+04 | 2.8E+03 | | ** | |
| 111444 | Bis(2-chloroethyl)ether | | C | 7.4E-02 | 1.3E-02 | | 7.4E-01 | 1.3E-01 | | 7.4E+00 | 1.3E+00 | | 1.0E+02 | |
| 108601 | Bis(2-chloroisopropyl)ether | | C | 2.4E+00 | 3.5E-01 | | 2.4E+01 | 3.5E+00 | | 2.4E+02 | 3.5E+01 | | 5.1E+02 | |
| 542881 | Bis(chloromethyl)ether | | C | 3.9E-04 | 8.4E-05 | | 3.9E-03 | 8.4E-04 | | 3.9E-02 | 8.4E-03 | | 4.5E-02 | |
| 75274 | Bromodichloromethane | X | C | 1.4E+00 | 2.1E-01 | | 1.4E+01 | 2.1E+00 | | 1.4E+02 | 2.1E+01 | | 2.1E+01 | |
| 75252 | Bromoform | | C | 2.2E+01 | 2.1E+00 | | 2.2E+02 | 2.1E+01 | | 2.2E+03 | 2.1E+02 | | 8.3E-02 | |
| 106990 | 1,3-Butadiene | | C | 8.7E-02 | 3.9E-02 | | 8.7E-01 | 3.9E-01 | | 8.7E+00 | 3.9E+00 | | 2.9E-02 | |
| 75150 | Carbon disulfide | | NC | 7.0E+02 | 2.2E+02 | | 7.0E+03 | 2.2E+03 | | 7.0E+04 | 2.2E+04 | | 5.6E+02 | |
| 56235 | Carbon tetrachloride | | C | 1.6E+00 | 2.6E-01 | | 1.6E+01 | 2.6E+00 | | 1.6E+02 | 2.6E+01 | | 5.0E+00 † | |
| 57749 | Chlordane | | C | 2.4E-01 | 1.5E-02 | | 2.4E+00 | 1.5E-01 | | 2.4E+01 | 1.5E+00 | | ** | |
| 126998 | 2-Chloro-1,3-butadiene (chloroprene) | | NC | 7.0E+00 | 1.9E+00 | | 7.0E+01 | 1.9E+01 | | 7.0E+02 | 1.9E+02 | | 1.4E+01 | |
| 108907 | Chlorobenzene | | NC | 6.0E+01 | 1.3E+01 | | 6.0E+02 | 1.3E+02 | | 6.0E+03 | 1.3E+03 | | 3.9E+02 | |
| 109693 | 1-Chlorobutane | X | NC | 1.4E+03 | 3.7E+02 | | 1.4E+04 | 3.7E+03 | | 1.4E+05 | 3.7E+04 | | 2.0E+03 | |
| 124481 | Chlorodibromomethane | X | C | 1.0E+00 | 1.2E-01 | | 1.0E+01 | 1.2E+00 | | 1.0E+02 | 1.2E+01 | | 3.2E+01 | |
| 75456 | Chlorodifluoromethane | | NC | 5.0E+04 | 1.4E+04 | | 5.0E+05 | 1.4E+05 | | ** | ** | | ** | |
| 75003 | Chloroethane (ethyl chloride) | | NC | 1.0E+04 | 3.8E+03 | | 1.0E+05 | 3.8E+04 | | 1.0E+06 | 3.8E+05 | | 2.8E+04 | 9.17 ug/L |
| 67663 | Chloroform | | C | 1.1E+00 | 2.2E-01 | | 1.1E+01 | 2.2E+00 | | 1.1E+02 | 2.2E+01 | | 8.0E+01 † | |
| 95578 | 2-Chlorophenol | X | NC | 1.8E+01 | 3.3E+00 | | 1.8E+02 | 3.3E+01 | | 1.8E+03 | 3.3E+02 | | 1.1E+03 | |
| 75296 | 2-Chloropropane | | NC | 1.0E+02 | 3.2E+01 | | 1.0E+03 | 3.2E+02 | | 1.0E+04 | 3.2E+03 | | 1.7E+02 | |
| 218019 | Chrysene | X | C | 1.2E+01 | 1.2E+00 | | ** | ** | | ** | ** | | ** | |
| 156592 | cis-1,2-Dichloroethylene | X | NC | 3.5E+01 | 8.8E+00 | | 3.5E+02 | 8.8E+01 | | 3.5E+03 | 8.8E+02 | | 2.1E+02 | |
| 123739 | Crotonaldehyde (2-butenal) | X | C | 4.5E-02 | 1.6E-02 | | 4.5E-01 | 1.6E-01 | | 4.5E+00 | 1.6E+00 | | 5.6E+01 | |
| 98828 | Cumene | | NC | 4.0E+02 | 8.1E+01 | | 4.0E+03 | 8.1E+02 | | 4.0E+04 | 8.1E+03 | | 8.4E+00 | |

* The highest concentration is noted for wells MW-1S, S-3 and 4S.

Table 2b: Question 4 Generic Screening Levels and Summary Sheet [1]
Risk = 1 x $10^{-5}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Proscribed Risk Level and the Target Hazard Index [R=$10^{-5}$, HI=1] $C_{target}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 72559 | DDE | X | C | 2.5E-01 | 1.9E-02 | | 2.5E+00 | 1.9E-01 | | 2.5E+01 | 1.9E+00 | | ** | |
| 132649 | Dibenzofuran | X | NC | 1.4E+01 | 2.0E+00 | | 1.4E+02 | 2.0E+01 | | 1.4E+03 | 2.0E+02 | | ** | |
| 96128 | 1,2-Dibromo-3-chloropropane | | NC | 2.0E-01 | 2.1E-02 | | 2.0E+00 | 2.1E-01 | | 2.0E+01 | 2.1E+00 | | 3.3E+01 | |
| 106934 | 1,2-Dibromoethane (ethylene dibromide) | | C | 1.1E-01 | 1.4E-02 | | 1.1E+00 | 1.4E-01 | | 1.1E+01 | 1.4E+00 | | 3.6E+00 | |
| 541731 | 1,3-Dichlorobenzene | X | NC | 1.1E+02 | 1.7E+01 | | 1.1E+03 | 1.7E+02 | | 1.1E+04 | 1.7E+03 | | 8.3E+02 | |
| 95501 | 1,2-Dichlorobenzene | | NC | 2.0E+02 | 3.3E+01 | | 2.0E+03 | 3.3E+02 | | 2.0E+04 | 3.3E+03 | | 2.6E+03 | |
| 106467 | 1,4-Dichlorobenzene | | NC | 8.0E+02 | 1.3E+02 | | 8.0E+03 | 1.3E+03 | | 8.0E+04 | 1.3E+04 | | 8.2E+03 | 6.1 ug/L |
| 75718 | Dichlorodifluoromethane | | NC | 2.0E+02 | 4.0E+01 | | 2.0E+03 | 4.0E+02 | | 2.0E+04 | 4.0E+03 | | 1.4E+01 | |
| 75343 | 1,1-Dichloroethane | | NC | 5.0E+02 | 1.2E+02 | | 5.0E+03 | 1.2E+03 | | 5.0E+04 | 1.2E+04 | | 2.2E+03 | |
| 107062 | 1,2-Dichloroethane | | C | 9.4E-01 | 2.3E-01 | | 9.4E+00 | 2.3E+00 | | 9.4E+01 | 2.3E+01 | | 2.3E+01 | |
| 75354 | 1,1-Dichloroethylene | | NC | 2.0E+02 | 5.0E+01 | | 2.0E+03 | 5.0E+02 | | 2.0E+04 | 5.0E+03 | | 1.9E+02 | |
| 78875 | 1,2-Dichloropropane | | NC | 4.0E+00 | 8.7E-01 | | 4.0E+01 | 8.7E+00 | | 4.0E+02 | 8.7E+01 | | 3.5E+01 | |
| 542756 | 1,3-Dichloropropene | | C | 6.1E+00 | 1.3E+00 | | 6.1E+01 | 1.3E+01 | | 6.1E+02 | 1.3E+02 | | 8.4E+00 | |
| 60571 | Dieldrin | | C | 5.3E-03 | 3.4E-04 | | 5.3E-02 | 3.4E-03 | | 5.3E-01 | 3.4E-02 | | 8.6E+00 | |
| 115297 | Endosulfan | X | NC | 2.1E+01 | 1.3E+00 | | 2.1E+02 | 1.3E+01 | | ** | ** | | ** | |
| 106898 | Epichlorohydrin | | NC | 1.0E+00 | 2.6E-01 | | 1.0E+01 | 2.6E+00 | | 1.0E+02 | 2.6E+01 | | 8.0E+02 | |
| 60297 | Ethyl ether | X | NC | 7.0E+02 | 2.3E+02 | | 7.0E+03 | 2.3E+03 | | 7.0E+04 | 2.3E+04 | | 5.2E+02 | |
| 141786 | Ethylacetate | X | NC | 3.2E+03 | 8.7E+02 | | 3.2E+04 | 8.7E+03 | | 3.2E+05 | 8.7E+04 | | 5.6E+05 | |
| 100414 | Ethylbenzene | | C | 2.2E+01 | 5.1E+00 | | 2.2E+02 | 5.1E+01 | | 2.2E+03 | 5.1E+02 | | 7.0E+02 † | |
| 75218 | Ethylene oxide | | C | 2.4E-01 | 1.4E-01 | | 2.4E+00 | 1.4E+00 | | 2.4E+01 | 1.4E+01 | | 1.1E+01 | |
| 97632 | Ethylmethacrylate | X | NC | 3.2E+02 | 6.8E+01 | | 3.2E+03 | 6.8E+02 | | 3.2E+04 | 6.8E+03 | | 9.1E+03 | |
| 86737 | Fluorene | X | NC | 1.4E+02 | 2.1E+01 | | 1.4E+03 | 2.1E+02 | | ** | ** | | ** | |
| 110009 | Furan | X | NC | 3.5E+00 | 1.3E+00 | | 3.5E+01 | 1.3E+01 | | 3.5E+02 | 1.3E+02 | | 1.6E+01 | |
| 58899 | gamma-HCH (Lindane) | X | C | 6.6E-02 | 5.5E-03 | | 6.6E-01 | 5.5E-02 | | 6.6E+00 | 5.5E-01 | | 1.1E+02 | |
| 76448 | Heptachlor | | C | 1.9E-02 | 1.2E-03 | | 1.9E-01 | 1.2E-02 | | 1.9E+00 | 1.2E-01 | | 4.0E-01 † | |
| 87683 | Hexachloro-1,3-butadiene | | C | 1.1E+00 | 1.0E-01 | | 1.1E+01 | 1.0E+00 | | 1.1E+02 | 1.0E+01 | | 3.3E+00 | |
| 118741 | Hexachlorobenzene | | C | 5.3E-02 | 4.5E-03 | | 5.3E-01 | 4.5E-02 | | 5.3E+00 | 4.5E-01 | | 1.0E+00 † | |
| 77474 | Hexachlorocyclopentadiene | | NC | 2.0E-01 | 1.8E-02 | | 2.0E+00 | 1.8E-01 | | 2.0E+01 | 1.8E+00 | | 5.0E+01 † | |
| 67721 | Hexachloroethane | | C | 6.1E+00 | 6.3E-01 | | 6.1E+01 | 6.3E+00 | | 6.1E+02 | 6.3E+01 | | 3.8E+01 | |
| 110543 | Hexane | | NC | 2.0E+02 | 5.7E+01 | | 2.0E+03 | 5.7E+02 | | 2.0E+04 | 5.7E+03 | | 2.8E+00 | |
| 74908 | Hydrogen cyanide | | NC | 3.0E+00 | 2.7E+00 | | 3.0E+01 | 2.7E+01 | | 3.0E+02 | 2.7E+02 | | 5.5E+02 | |
| 78831 | Isobutanol | X | NC | 1.1E+03 | 3.5E+02 | | 1.1E+04 | 3.5E+03 | | 1.1E+05 | 3.5E+04 | | 2.2E+06 | |
| 7439976 | Mercury (elemental) | | NC | 3.0E-01 | 3.7E-02 | | 3.0E+00 | 3.7E-01 | | 3.0E+01 | 3.7E+00 | | 6.8E-01 | |
| 126987 | Methacrylonitrile | | NC | 7.0E-01 | 2.6E-01 | | 7.0E+00 | 2.6E+00 | | 7.0E+01 | 2.6E+01 | | 6.8E+01 | |
| 72435 | Methoxychlor | X | NC | 1.8E+01 | 1.2E+00 | | ** | ** | | ** | ** | | ** | |
| 79209 | Methyl acetate | X | NC | 3.5E+03 | 1.2E+03 | | 3.5E+04 | 1.2E+04 | | 3.5E+05 | 1.2E+05 | | 7.2E+05 | |
| 96333 | Methyl acrylate | X | NC | 1.1E+02 | 3.0E+01 | | 1.1E+03 | 3.0E+02 | | 1.1E+04 | 3.0E+03 | | 1.4E+04 | |

**Table 2b: Question 4 Generic Screening Levels and Summary Sheet [1]**
Risk = 1 x $10^{-5}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Prescribed Risk Level and the Target Hazard Index [R=$10^{-5}$, HI=1] $C_{target}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 74839 | Methyl bromide | | NC | 5.0E+00 | 1.3E+00 | | 5.0E+01 | 1.3E+01 | | 5.0E+02 | 1.3E+02 | | 2.0E+01 | |
| 74873 | Methyl chloride (chloromethane) | | C | 2.4E+01 | 1.2E+01 | | 2.4E+02 | 1.2E+02 | | 2.4E+03 | 1.2E+03 | | 6.7E+01 | |
| 108872 | Methylcyclohexane | | NC | 3.0E+03 | 7.5E+02 | | 3.0E+04 | 7.5E+03 | | 3.0E+05 | 7.5E+04 | | 7.1E+02 | |
| 74953 | Methylene bromide | X | NC | 3.5E+01 | 4.9E+00 | | 3.5E+02 | 4.9E+01 | | 3.5E+03 | 4.9E+02 | | 9.9E+02 | |
| 75092 | Methylene chloride | | C | 5.2E+01 | 1.5E+01 | | 5.2E+02 | 1.5E+02 | | 5.2E+03 | 1.5E+03 | | 5.8E+02 | |
| 78933 | Methylethylketone (2-butanone) | | NC | 1.0E+03 | 3.4E+02 | | 1.0E+04 | 3.4E+03 | | 1.0E+05 | 3.4E+04 | | 4.4E+05 | |
| 108101 | Methylisobutylketone | | NC | 8.0E+01 | 2.0E+01 | | 8.0E+02 | 2.0E+02 | | 8.0E+03 | 2.0E+03 | | 1.4E+04 | |
| 80626 | Methylmethacrylate | | NC | 7.0E+02 | 1.7E+02 | | 7.0E+03 | 1.7E+03 | | 7.0E+04 | 1.7E+04 | | 5.1E+04 | |
| 91576 | 2-Methylnaphthalene | X | NC | 7.0E+01 | 1.2E+01 | | 7.0E+02 | 1.2E+02 | | 7.0E+03 | 1.2E+03 | | 3.3E+03 | |
| 1634044 | MTBE | | NC | 3.0E+03 | 8.3E+02 | | 3.0E+04 | 8.3E+03 | | 3.0E+05 | 8.3E+04 | | 1.2E+05 | |
| 108383 | m-Xylene | X | NC | 7.0E+03 | 1.6E+03 | | 7.0E+04 | 1.6E+04 | | 7.0E+05 | 1.6E+05 | | 2.3E+04 | |
| 91203 | Naphthalene | | NC | 3.0E+00 | 5.7E-01 | | 3.0E+01 | 5.7E+00 | | 3.0E+02 | 5.7E+01 | | 1.5E+02 | |
| 104518 | n-Butylbenzene | X | NC | 1.4E+02 | 2.6E+01 | | 1.4E+03 | 2.6E+02 | | 1.4E+04 | 2.6E+03 | | 2.6E+02 | |
| 98953 | Nitrobenzene | | NC | 2.0E+00 | 4.0E-01 | | 2.0E+01 | 4.0E+00 | | 2.0E+02 | 4.0E+01 | | 2.0E+03 | |
| 79469 | 2-Nitropropane | | C | 9.0E-03 | 2.5E-03 | | 9.0E-02 | 2.5E-02 | | 9.0E-01 | 2.5E-01 | | 1.8E+00 | |
| 924163 | N-Nitroso-di-n-butylamine | | C | 1.5E-02 | 2.4E-03 | | 1.5E-01 | 2.4E-02 | | 1.5E+00 | 2.4E-01 | | 1.2E+00 | |
| 103651 | n-Propylbenzene | X | NC | 1.4E+02 | 2.8E+01 | | 1.4E+03 | 2.8E+02 | | 1.4E+04 | 2.8E+03 | | 3.2E+02 | |
| 88722 | o-Nitrotoluene | X | NC | 3.5E+01 | 6.2E+00 | | 3.5E+02 | 6.2E+01 | | 3.5E+03 | 6.2E+02 | | 6.8E+04 | |
| 95476 | o-Xylene | X | NC | 7.0E+03 | 1.6E+03 | | 7.0E+04 | 1.6E+04 | | 7.0E+05 | 1.6E+05 | | 3.3E+04 | |
| 106423 | p-Xylene | X | NC | 7.0E+03 | 1.6E+03 | | 7.0E+04 | 1.6E+04 | | 7.0E+05 | 1.6E+05 | | 2.2E+04 | |
| 129000 | Pyrene | X | NC | 1.1E+02 | 1.3E+01 | | ** | ** | | ** | ** | | ** | |
| 135988 | sec-Butylbenzene | X | NC | 1.4E+02 | 2.6E+01 | | 1.4E+03 | 2.6E+02 | | 1.4E+04 | 2.6E+03 | | 2.5E+02 | |
| 100425 | Styrene | | NC | 1.0E+03 | 2.3E+02 | | 1.0E+04 | 2.3E+03 | | 1.0E+05 | 2.3E+04 | | 8.9E+03 | |
| 98066 | tert-Butylbenzene | X | NC | 1.4E+02 | 2.6E+01 | | 1.4E+03 | 2.6E+02 | | 1.4E+04 | 2.6E+03 | | 2.9E+02 | |
| 630206 | 1,1,1,2-Tetrachloroethane | | C | 3.3E+00 | 4.8E-01 | | 3.3E+01 | 4.8E+00 | | 3.3E+02 | 4.8E+01 | | 3.3E+01 | |
| 79345 | 1,1,2,2-Tetrachloroethane | | C | 4.2E-01 | 6.1E-02 | | 4.2E+00 | 6.1E-01 | | 4.2E+01 | 6.1E+00 | | 3.0E+01 | |
| 127184 | Tetrachloroethylene | | C | 8.1E+00 | 1.2E+00 | | 8.1E+01 | 1.2E+01 | | 8.1E+02 | 1.2E+02 | | 1.1E+01 | |
| 108883 | Toluene | | NC | 4.0E+02 | 1.1E+02 | | 4.0E+03 | 1.1E+03 | | 4.0E+04 | 1.1E+04 | | 1.5E+03 | 12 ug/L |
| 156605 | trans-1,2-Dichloroethylene | X | NC | 7.0E+01 | 1.8E+01 | | 7.0E+02 | 1.8E+02 | | 7.0E+03 | 1.8E+03 | | 1.8E+02 | |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | | NC | 3.0E+04 | 3.9E+03 | | 3.0E+05 | 3.9E+04 | | 3.0E+06 | 3.9E+05 | | 1.5E+03 | |
| 120821 | 1,2,4-Trichlorobenzene | | NC | 2.0E+02 | 2.7E+01 | | 2.0E+03 | 2.7E+02 | | 2.0E+04 | 2.7E+03 | | 3.4E+03 | |
| 79005 | 1,1,2-Trichloroethane | | C | 1.5E+00 | 2.8E-01 | | 1.5E+01 | 2.8E+00 | | 1.5E+02 | 2.8E+01 | | 4.1E+01 | |
| 71556 | 1,1,1-Trichloroethane | | NC | 2.2E+03 | 4.0E+02 | | 2.2E+04 | 4.0E+03 | | 2.2E+05 | 4.0E+04 | | 3.1E+03 | |
| 79016 | Trichloroethylene †† | X | C | 2.2E-01 | 4.1E-02 | | 2.2E+00 | 4.1E-01 | | 2.2E+01 | 4.1E+00 | | 5.0E+00 † | |
| 75694 | Trichlorofluoromethane | | NC | 7.0E+02 | 1.2E+02 | | 7.0E+03 | 1.2E+03 | | 7.0E+04 | 1.2E+04 | | 1.8E+02 | |
| 96184 | 1,2,3-Trichloropropane | | NC | 4.9E+00 | 8.1E-01 | | 4.9E+01 | 8.1E+00 | | 4.9E+02 | 8.1E+01 | | 2.8E+02 | |
| 95636 | 1,2,4-Trimethylbenzene | | NC | 6.0E+00 | 1.2E+00 | | 6.0E+01 | 1.2E+01 | | 6.0E+02 | 1.2E+02 | | 2.4E+01 | |

Table 2b: Question 4 Generic Screening Levels and Summary Sheet [1]
Risk = 1 x $10^{-5}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Prescribed Risk Level and the Target Hazard Index (R=$10^{-5}$, HI=1) $C_{target}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 108678 | 1,3,5-Trimethylbenzene | | NC | 6.0E+00 | 1.2E+00 | | 6.0E+01 | 1.2E+01 | | 6.0E+02 | 1.2E+02 | | 2.5E+01 | |
| 108054 | Vinyl acetate | | NC | 2.0E+02 | 5.7E+01 | | 2.0E+03 | 5.7E+02 | | 2.0E+04 | 5.7E+03 | | 9.6E+03 | |
| 75014 | Vinyl chloride (chloroethene) | | C | 2.8E+00 | 1.1E+00 | | 2.8E+01 | 1.1E+01 | | 2.8E+02 | 1.1E+02 | | 2.5E+00 | |

[1] AF = 0.1 for Shallow Soil Gas Target Concentration
AF = 0.01 for Deep Soil Gas Target Concentration
AF = 0.001 for Groundwater Target Concentration

* Health-based target breathing concentration exceeds maximum possible chemical vapor concentration (pathway incomplete)

** Target soil gas concentration exceeds maximum possible vapor concentration (pathway incomplete)

† The target groundwater concentration is the MCL. (The MCL for chloroform is the MCL for total Trihalomethanes. The MCL listed for m-Xylene, o-Xylene, and p-Xylene is the MCL for total Xylenes.)

†† The target concentration for trichloroethylene is based on the upper bound cancer slope factor identified in EPA's draft risk assessment for trichloroethylene (US EPA, 2001). The slope factor is based on state-of-the-art methodology, however the TCE assessment is still undergoing review. As a result, the slope factor and the target concentration values for TCE may be revised further. (See Appendix D.)

Table 2c: Question 4 Generic Screening Levels and Summary Sheet [1]
Risk = 1 x $10^{-6}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Prescribed Risk Level and the Target Hazard Index ($R=10^{-6}$, HI=1) $C_{target}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 83329 | Acenaphthene | X | NC | 2.1E+02 | 3.3E+01 | | 2.1E+03 | 3.3E+02 | | 2.1E+04 | 3.3E+03 | | ** | |
| 75070 | Acetaldehyde | | C | 1.1E+00 | 6.1E-01 | | 1.1E+01 | 6.1E+00 | | 1.1E+02 | 6.1E+01 | | 3.4E+02 | |
| 67641 | Acetone | X | NC | 3.5E+02 | 1.5E+02 | | 3.5E+03 | 1.5E+03 | | 3.5E+04 | 1.5E+04 | | 2.2E+05 | |
| 75058 | Acetonitrile | | NC | 6.0E+01 | 3.6E+01 | | 6.0E+02 | 3.6E+02 | | 6.0E+03 | 3.6E+03 | | 4.2E+04 | |
| 98862 | Acetophenone | X | NC | 3.5E+02 | 7.1E+01 | | 3.5E+03 | 7.1E+02 | | 3.5E+04 | 7.1E+03 | | 8.0E+05 | |
| 107028 | Acrolein | | NC | 2.0E-02 | 8.7E-03 | | 2.0E-01 | 8.7E-02 | | 2.0E+00 | 8.7E-01 | | 4.0E+00 | |
| 107131 | Acrylonitrile | | C | 3.6E-02 | 1.7E-02 | | 3.6E-01 | 1.7E-01 | | 3.6E+00 | 1.7E+00 | | 8.5E+00 | |
| 309002 | Aldrin | | C | 5.0E-04 | 3.3E-05 | | 5.0E-03 | 3.3E-04 | | 5.0E-02 | 3.3E-03 | | 7.1E-02 | |
| 319846 | alpha-HCH (alpha-BHC) | | C | 1.4E-03 | 1.1E-04 | | 1.4E-02 | 1.1E-03 | | 1.4E-01 | 1.1E-02 | | 3.1E+00 | |
| 100527 | Benzaldehyde | X | NC | 3.5E+02 | 8.1E+01 | | 3.5E+03 | 8.1E+02 | | 3.5E+04 | 8.1E+03 | | 3.6E+05 | |
| 71432 | Benzene | | C | 3.1E-01 | 9.8E-02 | | 3.1E+00 | 9.8E-01 | | 3.1E+01 | 9.8E+00 | | 5.0E+00 [†] | 13.7 |
| 205992 | Benzo(b)fluoranthene | X | C | 1.2E-02 | 1.1E-03 | | 1.2E-01 | 1.1E-02 | | 1.2E+00 | 1.1E-01 | | ** | |
| 100447 | Benzylchloride | X | C | 5.0E-02 | 9.7E-03 | | 5.0E-01 | 9.7E-02 | | 5.0E+00 | 9.7E-01 | | 3.0E+00 | |
| 91587 | beta-Chloronaphthalene | X | NC | 2.8E+02 | 4.2E+01 | | 2.8E+03 | 4.2E+02 | | 2.8E+04 | 4.2E+03 | | ** | |
| 92524 | Biphenyl | X | NC | 1.8E+02 | 2.8E+01 | | 1.8E+03 | 2.8E+02 | | 1.8E+04 | 2.8E+03 | | ** | |
| 111444 | Bis(2-chloroethyl)ether | | C | 7.4E-03 | 1.3E-03 | | 7.4E-02 | 1.3E-02 | | 7.4E-01 | 1.3E-01 | | 1.0E+01 | |
| 108601 | Bis(2-chloroisopropyl)ether | | C | 2.4E-01 | 3.5E-02 | | 2.4E+00 | 3.5E-01 | | 2.4E+01 | 3.5E+00 | | 5.1E+01 | |
| 542881 | Bis(chloromethyl)ether | | C | 3.9E-05 | 8.4E-06 | | 3.9E-04 | 8.4E-05 | | 3.9E-03 | 8.4E-04 | | 4.5E-03 | |
| 75274 | Bromodichloromethane | X | C | 1.4E-01 | 2.1E-02 | | 1.4E+00 | 2.1E-01 | | 1.4E+01 | 2.1E+00 | | 2.1E+00 | |
| 75252 | Bromoform | | C | 2.2E+00 | 2.1E-01 | | 2.2E+01 | 2.1E+00 | | 2.2E+02 | 2.1E+01 | | 8.3E-03 | |
| 106990 | 1,3-Butadiene | | C | 8.7E-03 | 3.9E-03 | | 8.7E-02 | 3.9E-02 | | 8.7E-01 | 3.9E-01 | | 2.9E-03 | |
| 75150 | Carbon disulfide | | NC | 7.0E+02 | 2.2E+02 | | 7.0E+03 | 2.2E+03 | | 7.0E+04 | 2.2E+04 | | 5.6E+02 | |
| 56235 | Carbon tetrachloride | | C | 1.6E-01 | 2.6E-02 | | 1.6E+00 | 2.6E-01 | | 1.6E+01 | 2.6E+00 | | 5.0E+00 [†] | |
| 57749 | Chlordane | | C | 2.4E-02 | 1.5E-03 | | 2.4E-01 | 1.5E-02 | | 2.4E+00 | 1.5E-01 | | 1.2E+01 | |
| 126998 | 2-Chloro-1,3-butadiene (chloroprene) | | NC | 7.0E+00 | 1.9E+00 | | 7.0E+01 | 1.9E+01 | | 7.0E+02 | 1.9E+02 | | 1.4E+01 | |
| 108907 | Chlorobenzene | | NC | 6.0E+01 | 1.3E+01 | | 6.0E+02 | 1.3E+02 | | 6.0E+03 | 1.3E+03 | | 3.9E+02 | |
| 109693 | 1-Chlorobutane | X | NC | 1.4E+03 | 3.7E+02 | | 1.4E+04 | 3.7E+03 | | 1.4E+05 | 3.7E+04 | | 2.0E+03 | |
| 124481 | Chlorodibromomethane | X | C | 1.0E-01 | 1.2E-02 | | 1.0E+00 | 1.2E-01 | | 1.0E+01 | 1.2E+00 | | 3.2E+00 | |
| 75456 | Chlorodifluoromethane | | NC | 5.0E+04 | 1.4E+04 | | 5.0E+05 | 1.4E+05 | | ** | ** | | ** | |
| 75003 | Chloroethane (ethyl chloride) | | NC | 1.0E+04 | 3.8E+03 | | 1.0E+05 | 3.8E+04 | | 1.0E+06 | 3.8E+05 | | 2.8E+04 | 9.17 ug/L |
| 67663 | Chloroform | | C | 1.1E-01 | 2.2E-02 | | 1.1E+00 | 2.2E-01 | | 1.1E+01 | 2.2E+00 | | 8.0E+01 [†] | |
| 95578 | 2-Chlorophenol | X | NC | 1.8E+01 | 3.3E+00 | | 1.8E+02 | 3.3E+01 | | 1.8E+03 | 3.3E+02 | | 1.1E+03 | |
| 75296 | 2-Chloropropane | | NC | 1.0E+02 | 3.2E+01 | | 1.0E+03 | 3.2E+02 | | 1.0E+04 | 3.2E+03 | | 1.7E+02 | |
| 218019 | Chrysene | X | C | 1.2E+00 | 1.2E-01 | | 1.2E+01 | 1.2E+00 | | ** | ** | | ** | |
| 156592 | cis-1,2-Dichloroethylene | X | NC | 3.5E+01 | 8.8E+00 | | 3.5E+02 | 8.8E+01 | | 3.5E+03 | 8.8E+02 | | 2.1E+02 | |
| 123739 | Crotonaldehyde (2-butenal) | X | C | 4.5E-03 | 1.6E-03 | | 4.5E-02 | 1.6E-02 | | 4.5E-01 | 1.6E-01 | | 5.6E+00 | |
| 98828 | Cumene | | NC | 4.0E+02 | 8.1E+01 | | 4.0E+03 | 8.1E+02 | | 4.0E+04 | 8.1E+03 | | 8.4E+00 | |

* ug/L - 15-cross gradient

3.1 ug/L - S-3 upgradient

6.39 ug/L - 4S downgradient

* The highest concentration is noted for wells MW-15, S-3 and 4S.

Table 2c: Question 4 Generic Screening Levels and Summary Sheet [1]
Risk = $1 \times 10^{-6}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Prescribed Risk Level and the Target Hazard Index (R=$10^{-6}$, HI=1) $C_{target}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 72559 | DDE | X | C | 2.5E-02 | 1.9E-03 | | 2.5E-01 | 1.9E-02 | | 2.5E+00 | 1.9E-01 | | 2.9E+01 | |
| 132649 | Dibenzofuran | X | NC | 1.4E+01 | 2.0E+00 | | 1.4E+02 | 2.0E+01 | | 1.4E+03 | 2.0E+02 | | ** | |
| 96128 | 1,2-Dibromo-3-chloropropane | | NC | 2.0E-01 | 2.1E-02 | | 2.0E+00 | 2.1E-01 | | 2.0E+01 | 2.1E+00 | | 3.3E+01 | |
| 106934 | 1,2-Dibromoethane (ethylene dibromide) | | C | 1.1E-02 | 1.4E-03 | | 1.1E-01 | 1.4E-02 | | 1.1E+00 | 1.4E-01 | | 3.6E-01 | |
| 541731 | 1,3-Dichlorobenzene | X | NC | 1.1E+02 | 1.7E+01 | | 1.1E+03 | 1.7E+02 | | 1.1E+04 | 1.7E+03 | | 8.3E+02 | |
| 95501 | 1,2-Dichlorobenzene | | NC | 2.0E+02 | 3.3E+01 | | 2.0E+03 | 3.3E+02 | | 2.0E+04 | 3.3E+03 | | 2.6E+03 | |
| 106467 | 1,4-Dichlorobenzene | | NC | 8.0E+02 | 1.3E+02 | | 8.0E+03 | 1.3E+03 | | 8.0E+04 | 1.3E+04 | | 8.2E+03 | 6.1 ug/L |
| 75718 | Dichlorodifluoromethane | | NC | 2.0E+02 | 4.0E+01 | | 2.0E+03 | 4.0E+02 | | 2.0E+04 | 4.0E+03 | | 1.4E+01 | |
| 75343 | 1,1-Dichloroethane | | NC | 5.0E+02 | 1.2E+02 | | 5.0E+03 | 1.2E+03 | | 5.0E+04 | 1.2E+04 | | 2.2E+03 | |
| 107062 | 1,2-Dichloroethane | | C | 9.4E-02 | 2.3E-02 | | 9.4E-01 | 2.3E-01 | | 9.4E+00 | 2.3E+00 | | 5.0E+00 † | |
| 75354 | 1,1-Dichloroethylene | | NC | 2.0E+02 | 5.0E+01 | | 2.0E+03 | 5.0E+02 | | 2.0E+04 | 5.0E+03 | | 1.9E+02 | |
| 78875 | 1,2-Dichloropropane | | NC | 4.0E+00 | 8.7E-01 | | 4.0E+01 | 8.7E+00 | | 4.0E+02 | 8.7E+01 | | 3.5E+01 | |
| 542756 | 1,3-Dichloropropene | | C | 6.1E-01 | 1.3E-01 | | 6.1E+00 | 1.3E+00 | | 6.1E+01 | 1.3E+01 | | 8.4E-01 | |
| 60571 | Dieldrin | | C | 5.3E-04 | 3.4E-05 | | 5.3E-03 | 3.4E-04 | | 5.3E-02 | 3.4E-03 | | 8.6E-01 | |
| 115297 | Endosulfan | X | NC | 2.1E+01 | 1.3E+00 | | 2.1E+02 | 1.3E+01 | | ** | ** | | ** | |
| 106898 | Epichlorohydrin | | NC | 1.0E+00 | 2.6E-01 | | 1.0E+01 | 2.6E+00 | | 1.0E+02 | 2.6E+01 | | 8.0E+02 | |
| 60297 | Ethyl ether | X | NC | 7.0E+02 | 2.3E+02 | | 7.0E+03 | 2.3E+03 | | 7.0E+04 | 2.3E+04 | | 5.2E+02 | |
| 141786 | Ethylacetate | X | NC | 3.2E+03 | 8.7E+02 | | 3.2E+04 | 8.7E+03 | | 3.2E+05 | 8.7E+04 | | 5.6E+05 | |
| 100414 | Ethylbenzene | | C | 2.2E+00 | 5.1E-01 | | 2.2E+01 | 5.1E+00 | | 2.2E+02 | 5.1E+01 | | 7.0E+02 † | |
| 75218 | Ethylene oxide | | C | 2.4E-02 | 1.4E-02 | | 2.4E-01 | 1.4E-01 | | 2.4E+00 | 1.4E+00 | | 1.1E+00 | |
| 97632 | Ethylmethacrylate | X | NC | 3.2E+02 | 6.8E+01 | | 3.2E+03 | 6.8E+02 | | 3.2E+04 | 6.8E+03 | | 9.1E+03 | |
| 86737 | Fluorene | X | NC | 1.4E+02 | 2.1E+01 | | 1.4E+03 | 2.1E+02 | | ** | ** | | ** | |
| 110009 | Furan | X | NC | 3.5E+00 | 1.3E+00 | | 3.5E+01 | 1.3E+01 | | 3.5E+02 | 1.3E+02 | | 1.6E+01 | |
| 58899 | gamma-HCH (Lindane) | X | C | 6.6E-03 | 5.5E-04 | | 6.6E-02 | 5.5E-03 | | 6.6E-01 | 5.5E-02 | | 1.1E+01 | |
| 76448 | Heptachlor | | C | 1.9E-03 | 1.2E-04 | | 1.9E-02 | 1.2E-03 | | 1.9E-01 | 1.2E-02 | | 4.0E-01 † | |
| 87683 | Hexachloro-1,3-butadiene | | C | 1.1E-01 | 1.0E-02 | | 1.1E+00 | 1.0E-01 | | 1.1E+01 | 1.0E+00 | | 3.3E-01 | |
| 118741 | Hexachlorobenzene | | C | 5.3E-03 | 4.5E-04 | | 5.3E-02 | 4.5E-03 | | 5.3E-01 | 4.5E-02 | | 1.0E+00 † | |
| 77474 | Hexachlorocyclopentadiene | | NC | 2.0E-01 | 1.8E-02 | | 2.0E+00 | 1.8E-01 | | 2.0E+01 | 1.8E+00 | | 5.0E+01 † | |
| 67721 | Hexachloroethane | | C | 6.1E-01 | 6.3E-02 | | 6.1E+00 | 6.3E-01 | | 6.1E+01 | 6.3E+00 | | 3.8E+00 | |
| 110543 | Hexane | | NC | 2.0E+02 | 5.7E+01 | | 2.0E+03 | 5.7E+02 | | 2.0E+04 | 5.7E+03 | | 2.8E+00 | |
| 74908 | Hydrogen cyanide | | NC | 3.0E+00 | 2.7E+00 | | 3.0E+01 | 2.7E+01 | | 3.0E+02 | 2.7E+02 | | 5.5E+02 | |
| 78831 | Isobutanol | X | NC | 1.1E+03 | 3.5E+02 | | 1.1E+04 | 3.5E+03 | | 1.1E+05 | 3.5E+04 | | 2.2E+06 | |
| 7439976 | Mercury (elemental) | | NC | 3.0E-01 | 3.7E-02 | | 3.0E+00 | 3.7E-01 | | 3.0E+01 | 3.7E+00 | | 6.8E-01 | |
| 126987 | Methacrylonitrile | | NC | 7.0E-01 | 2.6E-01 | | 7.0E+00 | 2.6E+00 | | 7.0E+01 | 2.6E+01 | | 6.9E+01 | |
| 72435 | Methoxychlor | X | NC | 1.8E+01 | 1.2E+00 | | ** | ** | | ** | ** | | ** | |
| 79209 | Methyl acetate | X | NC | 3.5E+03 | 1.2E+03 | | 3.5E+04 | 1.2E+04 | | 3.5E+05 | 1.2E+05 | | 7.2E+05 | |
| 96333 | Methyl acrylate | X | NC | 1.1E+02 | 3.0E+01 | | 1.1E+03 | 3.0E+02 | | 1.1E+04 | 3.0E+03 | | 1.4E+04 | |

Table 2c: Question 4 Generic Screening Levels and Summary Sheet [1]

Risk = 1 x $10^{-6}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Proscribed Risk Level and the Target Hazard Index ($R=10^{-6}$, HI=1) $C_{target}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 74839 | Methyl bromide | | NC | 5.0E+00 | 1.3E+00 | | 5.0E+01 | 1.3E+01 | | 5.0E+02 | 1.3E+02 | | 2.0E+01 | |
| 74873 | Methyl chloride (chloromethane) | | C | 2.4E+00 | 1.2E+00 | | 2.4E+01 | 1.2E+01 | | 2.4E+02 | 1.2E+02 | | 6.7E+00 | |
| 108872 | Methylcyclohexane | | NC | 3.0E+03 | 7.5E+02 | | 3.0E+04 | 7.5E+03 | | 3.0E+05 | 7.5E+04 | | 7.1E+02 | |
| 74953 | Methylene bromide | X | NC | 3.5E+01 | 4.9E+00 | | 3.5E+02 | 4.9E+01 | | 3.5E+03 | 4.9E+02 | | 9.9E+02 | |
| 75092 | Methylene chloride | | C | 5.2E+00 | 1.5E+00 | | 5.2E+01 | 1.5E+01 | | 5.2E+02 | 1.5E+02 | | 5.8E+01 | |
| 78933 | Methylethylketone (2-butanone) | | NC | 1.0E+03 | 3.4E+02 | | 1.0E+04 | 3.4E+03 | | 1.0E+05 | 3.4E+04 | | 4.4E+05 | |
| 108101 | Methylisobutylketone | | NC | 8.0E+01 | 2.0E+01 | | 8.0E+02 | 2.0E+02 | | 8.0E+03 | 2.0E+03 | | 1.4E+04 | |
| 80626 | Methylmethacrylate | | NC | 7.0E+02 | 1.7E+02 | | 7.0E+03 | 1.7E+03 | | 7.0E+04 | 1.7E+04 | | 5.1E+04 | |
| 91576 | 2-Methylnaphthalene | X | NC | 7.0E+01 | 1.2E+01 | | 7.0E+02 | 1.2E+02 | | 7.0E+03 | 1.2E+03 | | 3.3E+03 | |
| 1634044 | MTBE | | NC | 3.0E+03 | 8.3E+02 | | 3.0E+04 | 8.3E+03 | | 3.0E+05 | 8.3E+04 | | 1.2E+05 | |
| 108383 | m-Xylene | X | NC | 7.0E+03 | 1.6E+03 | | 7.0E+04 | 1.6E+04 | | 7.0E+05 | 1.6E+05 | | 2.3E+04 | |
| 91203 | Naphthalene | | NC | 3.0E+00 | 5.7E-01 | | 3.0E+01 | 5.7E+00 | | 3.0E+02 | 5.7E+01 | | 1.5E+02 | |
| 104518 | n-Butylbenzene | X | NC | 1.4E+02 | 2.6E+01 | | 1.4E+03 | 2.6E+02 | | 1.4E+04 | 2.6E+03 | | 2.6E+02 | |
| 98953 | Nitrobenzene | | NC | 2.0E+00 | 4.0E-01 | | 2.0E+01 | 4.0E+00 | | 2.0E+02 | 4.0E+01 | | 2.0E+03 | |
| 79469 | 2-Nitropropane | | C | 9.0E-04 | 2.5E-04 | | 9.0E-03 | 2.5E-03 | | 9.0E-02 | 2.5E-02 | | 1.8E-01 | |
| 924163 | N-Nitroso-di-n-butylamine | | C | 1.5E-03 | 2.4E-04 | | 1.5E-02 | 2.4E-03 | | 1.5E-01 | 2.4E-02 | | 1.2E-01 | |
| 103651 | n-Propylbenzene | X | NC | 1.4E+02 | 2.8E+01 | | 1.4E+03 | 2.8E+02 | | 1.4E+04 | 2.8E+03 | | 3.2E+02 | |
| 88722 | o-Nitrotoluene | X | NC | 3.5E+01 | 6.2E+00 | | 3.5E+02 | 6.2E+01 | | 3.5E+03 | 6.2E+02 | | 6.8E+04 | |
| 95476 | o-Xylene | X | NC | 7.0E+03 | 1.6E+03 | | 7.0E+04 | 1.6E+04 | | 7.0E+05 | 1.6E+05 | | 3.3E+04 | |
| 106423 | p-Xylene | X | NC | 7.0E+03 | 1.6E+03 | | 7.0E+04 | 1.6E+04 | | 7.0E+05 | 1.6E+05 | | 2.2E+04 | |
| 129000 | Pyrene | X | NC | 1.1E+02 | 1.3E+01 | | ** | ** | | ** | ** | | ** | |
| 135988 | sec-Butylbenzene | X | NC | 1.4E+02 | 2.6E+01 | | 1.4E+03 | 2.6E+02 | | 1.4E+04 | 2.6E+03 | | 2.5E+02 | |
| 100425 | Styrene | | NC | 1.0E+03 | 2.3E+02 | | 1.0E+04 | 2.3E+03 | | 1.0E+05 | 2.3E+04 | | 8.9E+03 | |
| 98066 | tert-Butylbenzene | X | NC | 1.4E+02 | 2.6E+01 | | 1.4E+03 | 2.6E+02 | | 1.4E+04 | 2.6E+03 | | 2.9E+02 | |
| 630206 | 1,1,1,2-Tetrachloroethane | | C | 3.3E-01 | 4.8E-02 | | 3.3E+00 | 4.8E-01 | | 3.3E+01 | 4.8E+00 | | 3.3E+00 | |
| 79345 | 1,1,2,2-Tetrachloroethane | | C | 4.2E-02 | 6.1E-03 | | 4.2E-01 | 6.1E-02 | | 4.2E+00 | 6.1E-01 | | 3.0E+00 | |
| 127184 | Tetrachloroethylene | | C | 8.1E-01 | 1.2E-01 | | 8.1E+00 | 1.2E+00 | | 8.1E+01 | 1.2E+01 | | 5.0E+00 [1] | |
| 108883 | Toluene | | NC | 4.0E+02 | 1.1E+02 | | 4.0E+03 | 1.1E+03 | | 4.0E+04 | 1.1E+04 | | 1.5E+03 | 12 ug/L |
| 156605 | trans-1,2-Dichloroethylene | X | NC | 7.0E+01 | 1.8E+01 | | 7.0E+02 | 1.8E+02 | | 7.0E+03 | 1.8E+03 | | 1.8E+02 | |
| 76131 | 1,1,2-Trichloro-1,2,2-trifluoroethane | | NC | 3.0E+04 | 3.9E+03 | | 3.0E+05 | 3.9E+04 | | 3.0E+06 | 3.9E+05 | | 1.5E+03 | |
| 120821 | 1,2,4-Trichlorobenzene | | NC | 2.0E+02 | 2.7E+01 | | 2.0E+03 | 2.7E+02 | | 2.0E+04 | 2.7E+03 | | 3.4E+03 | |
| 79005 | 1,1,2-Trichloroethane | | C | 1.5E-01 | 2.8E-02 | | 1.5E+00 | 2.8E-01 | | 1.5E+01 | 2.8E+00 | | 5.0E+00 [1] | |
| 71556 | 1,1,1-Trichloroethane | | NC | 2.2E+03 | 4.0E+02 | | 2.2E+04 | 4.0E+03 | | 2.2E+05 | 4.0E+04 | | 3.1E+03 | |
| 79016 | Trichloroethylene [11] | X | C | 2.2E-02 | 4.1E-03 | | 2.2E-01 | 4.1E-02 | | 2.2E+00 | 4.1E-01 | | 5.0E+00 [1] | |
| 75694 | Trichlorofluoromethane | | NC | 7.0E+02 | 1.2E+02 | | 7.0E+03 | 1.2E+03 | | 7.0E+04 | 1.2E+04 | | 1.8E+02 | |
| 96184 | 1,2,3-Trichloropropane | | NC | 4.9E+00 | 8.1E-01 | | 4.9E+01 | 8.1E+00 | | 4.9E+02 | 8.1E+01 | | 2.9E+02 | |
| 95636 | 1,2,4-Trimethylbenzene | | NC | 6.0E+00 | 1.2E+00 | | 6.0E+01 | 1.2E+01 | | 6.0E+02 | 1.2E+02 | | 2.4E+01 | |

Table 2c: Question 4 Generic Screening Levels and Summary Sheet [1]

Risk = 1 x $10^{-6}$

| CAS No. | Chemical | Compounds with Provisional Toxicity Data Extrapolated From Oral Sources | Basis of Target Concentration C=cancer risk NC=noncancer risk | Target Indoor Air Concentration to Satisfy Both the Proscribed Risk Level and the Target Hazard Index [R=$10^{-6}$, HI=1] $C_{target}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Indoor Air Concentration [if available] (specify units) | Target Shallow Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.1 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Shallow Soil Gas Concentration [if available] (specify units) | Target Deep Soil Gas Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor=0.01 $C_{soil-gas}$ (ug/m3) | (ppbv) | Measured or Reasonably Estimated Deep Soil Gas Concentration [if available] (specify units) | Target Groundwater Concentration Corresponding to Target Indoor Air Concentration Where the Soil Gas to Indoor Air Attenuation Factor = 0.001 and Partitioning Across the Water Table Obeys Henry's Law $C_{gw}$ (ug/L) | Measured or Reasonably Estimated Groundwater Concentration [if available] (specify units) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 108678 | 1,3,5-Trimethylbenzene | | NC | 6.0E+00 | 1.2E+00 | | 6.0E+01 | 1.2E+01 | | 6.0E+02 | 1.2E+02 | | 2.5E+01 | |
| 108054 | Vinyl acetate | | NC | 2.0E+02 | 5.7E+01 | | 2.0E+03 | 5.7E+02 | | 2.0E+04 | 5.7E+03 | | 8.6E+03 | |
| 75014 | Vinyl chloride (chloroethene) | | C | 2.8E-01 | 1.1E-01 | | 2.8E+00 | 1.1E+00 | | 2.8E+01 | 1.1E+01 | | 2.0E+00 [1] | |

[1] AF = 0.1 for Shallow Soil Gas Target Concentration
AF = 0.01 for Deep Soil Gas Target Concentration
AF = 0.001 for Groundwater Target Concentration

* Health-based target breathing concentration exceeds maximum possible chemical vapor concentration (pathway incomplete)

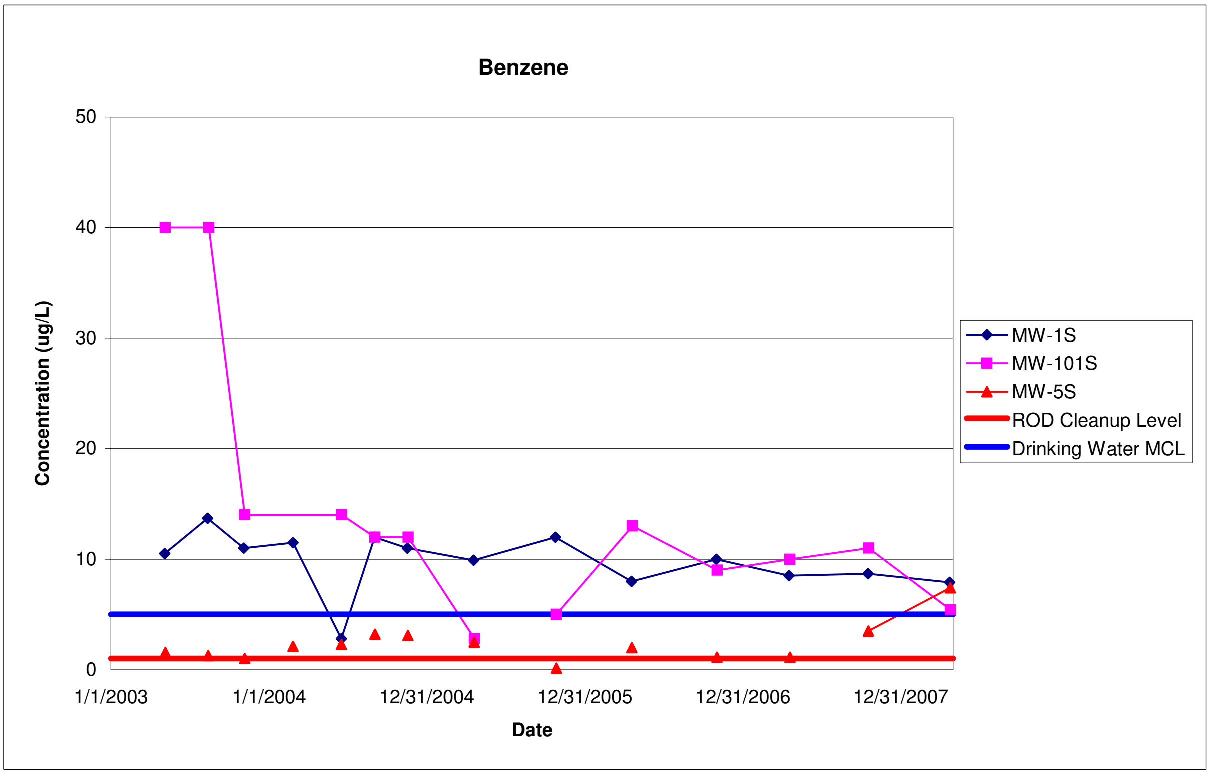
** Target soil gas concentration exceeds maximum possible vapor concentration (pathway incomplete)

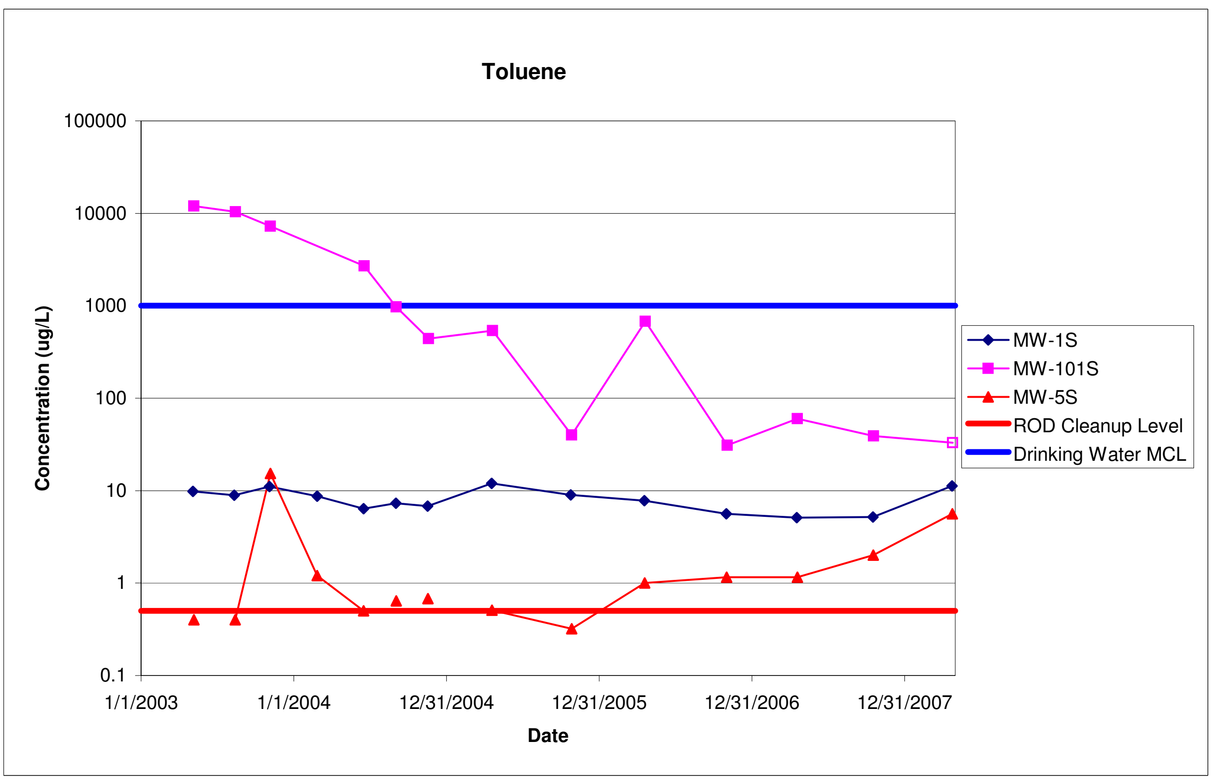
† The target groundwater concentration is the MCL. (The MCL for chloroform is the MCL for total Trihalomethanes. The MCL listed for m-Xylene, o-Xylene, and p-Xylene is the MCL for total Xylenes.)

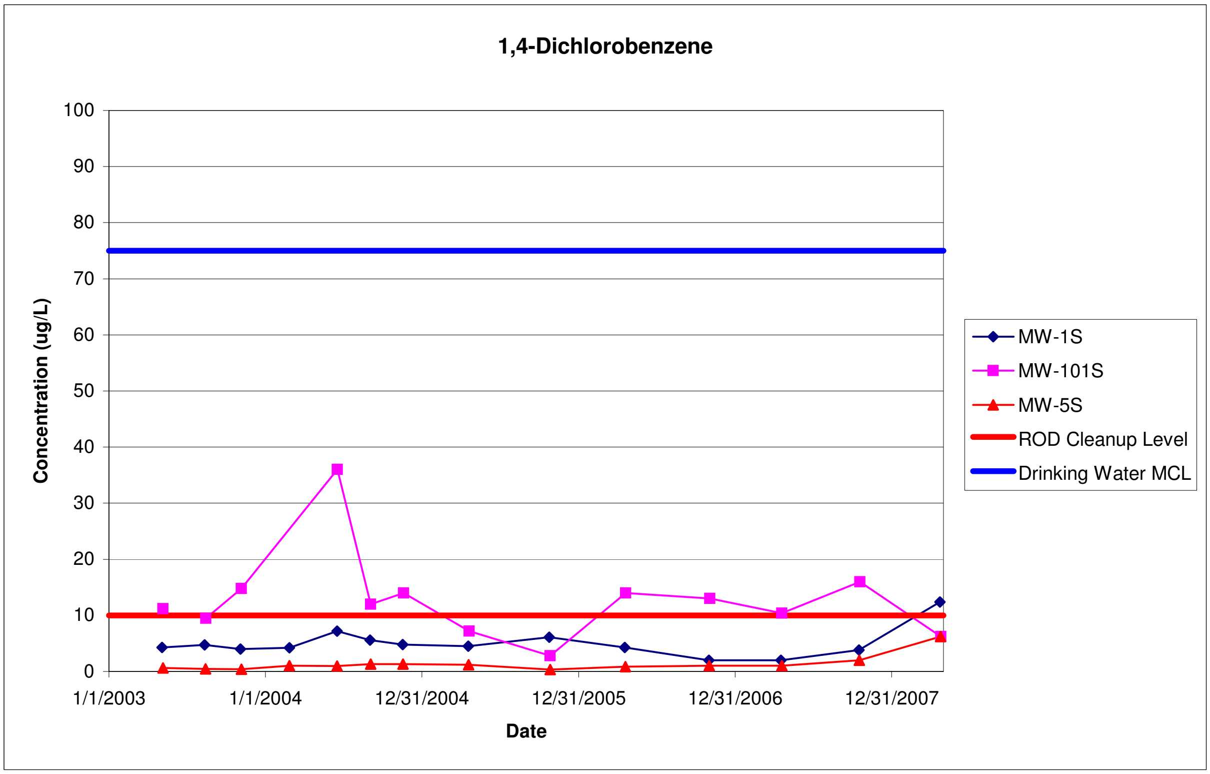
†† The target concentration for trichloroethylene is based on the upper bound cancer slope factor identified in EPA's draft risk assessment for trichloroethylene (US EPA, 2001). The slope factor is based on state-of-the-art methodology, however the TCE assessment is still undergoing review. As a result, the slope factor and the target concentration values for TCE may be revised further. (See Appendix D.)

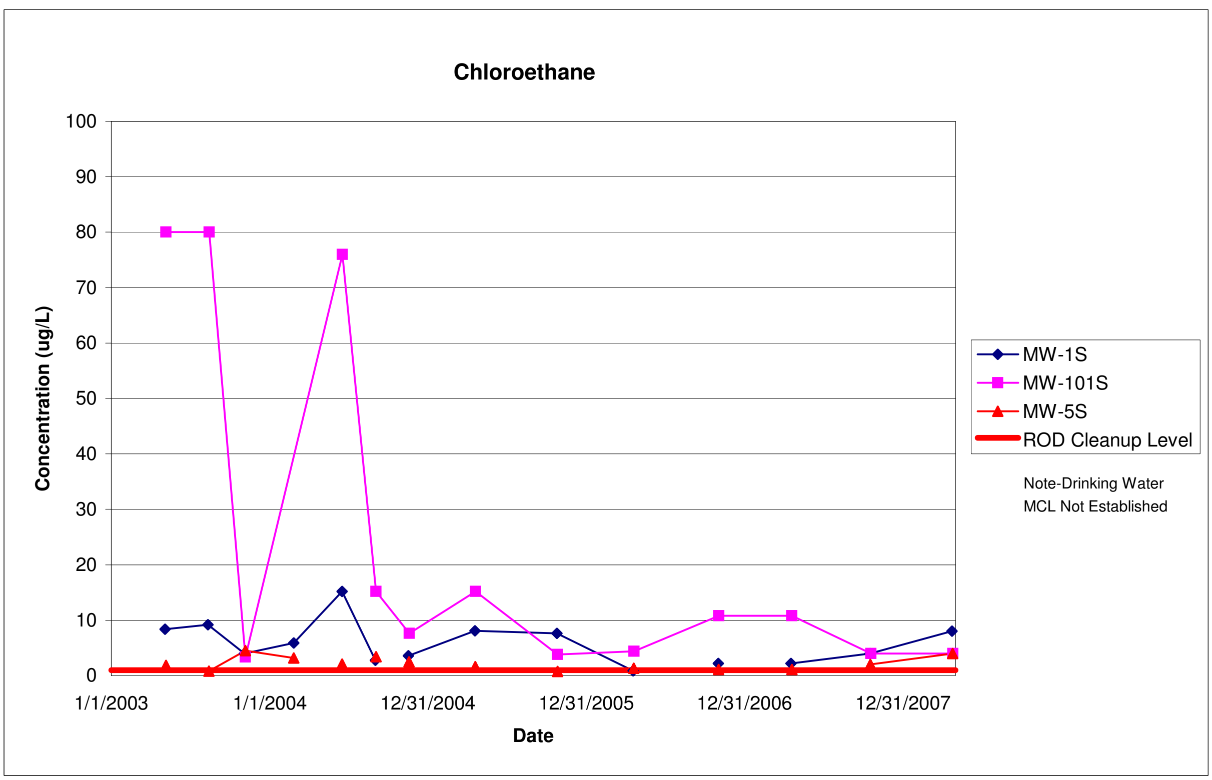
**APPENDIX E**

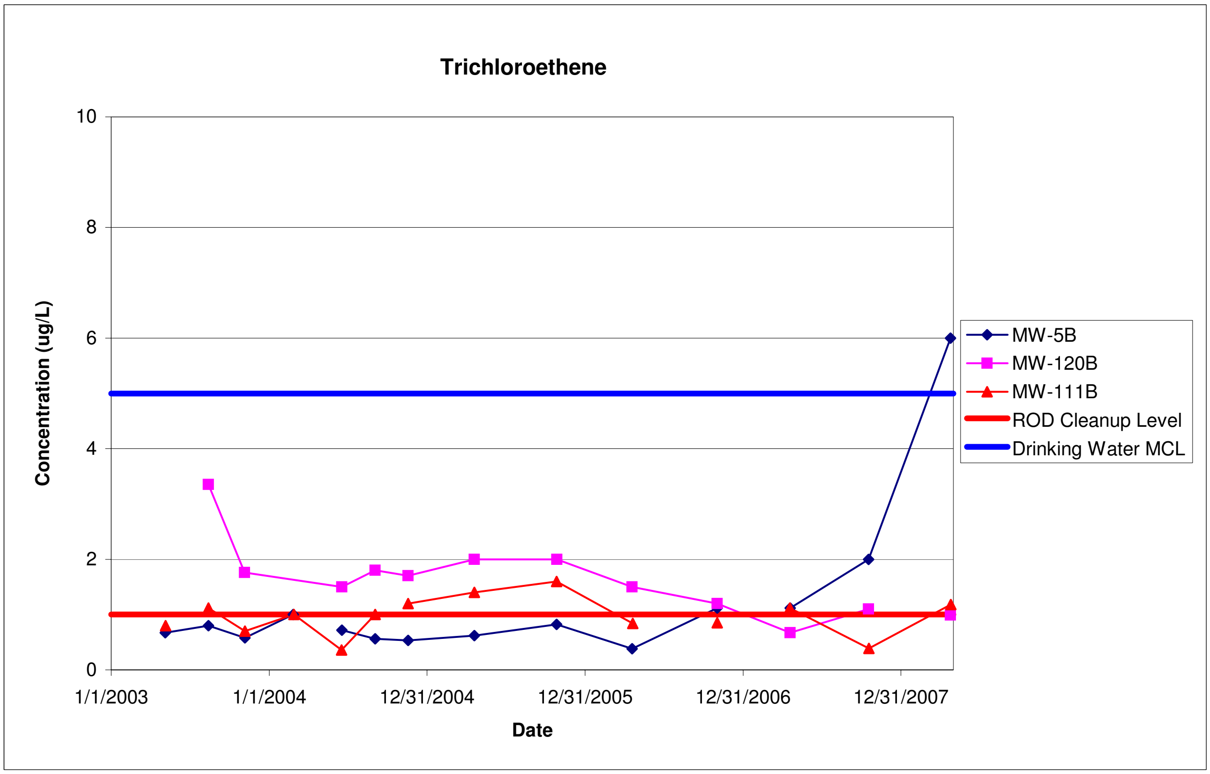
Graphs of Groundwater Concentration Trends for Select VOCs, SVOCs and Arsenic

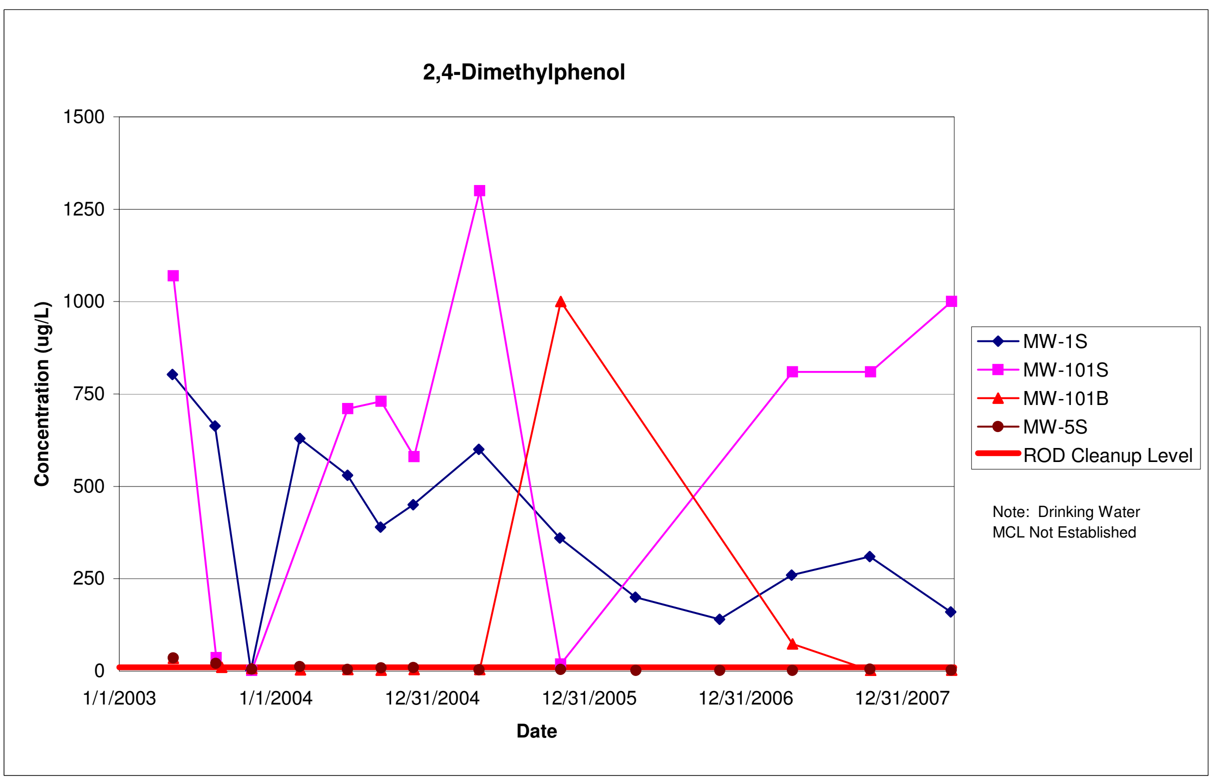

Benzene
50
40
30
20
10
0
1/1/2003
1/1/2004
12/31/2004
12/31/2005
12/31/2006
12/31/2007
Date
Concentration (ug/L)
MW-1S
MW-101S
MW-5S
ROD Cleanup Level
Drinking Water MCL

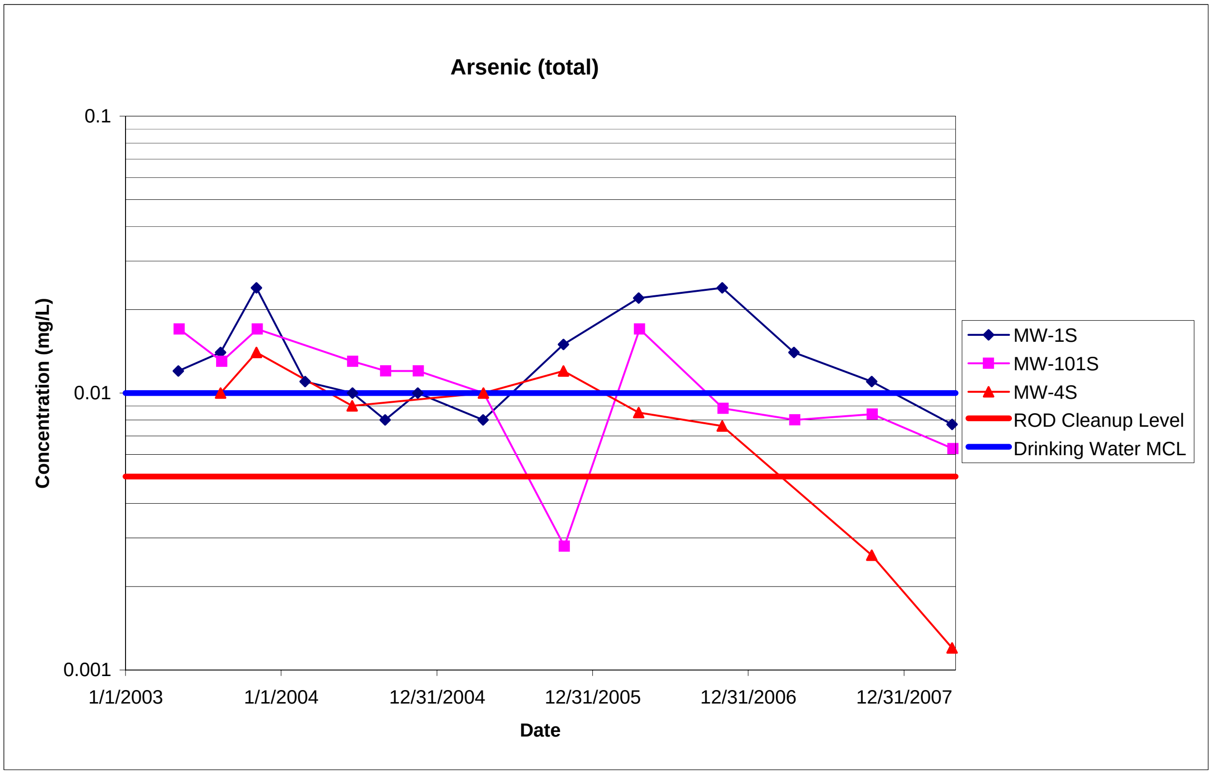

Toluene
100000
10000
1000
100
10
1
0.1
1/1/2003
1/1/2004
12/31/2004
12/31/2005
12/31/2006
12/31/2007
Date
Concentration (ug/L)
MW-1S
MW-101S
MW-5S
ROD Cleanup Level
Drinking Water MCL


1,4-Dichlorobenzene
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
1/1/2003
1/1/2004
12/31/2004
12/31/2005
12/31/2006
12/31/2007
Date
MW-1S
MW-101S
MW-5S
ROD Cleanup Level
Drinking Water MCL

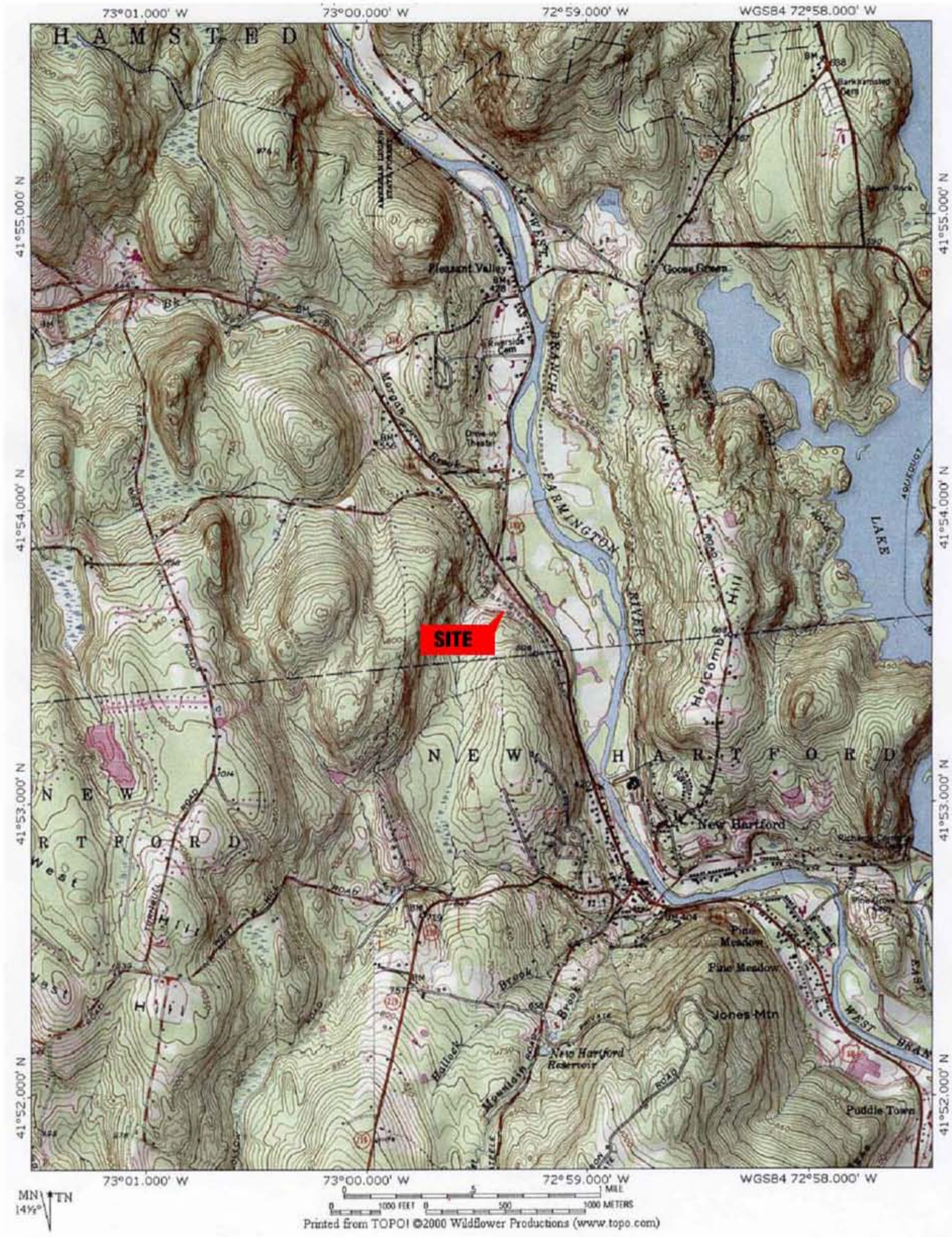

Chloroethane
Concentration (ug/L)
100
90
80
70
60
50
40
30
20
10
0
1/1/2003
1/1/2004
12/31/2004
12/31/2005
12/31/2006
12/31/2007
Date
MW-1S
MW-101S
MW-5S
ROD Cleanup Level
Note-Drinking Water
MCL Not Established


Trichloroethene
10
8
6
4
2
0
Concentration (ug/L)
1/1/2003
1/1/2004
12/31/2004
12/31/2005
12/31/2006
12/31/2007
Date
MW-5B
MW-120B
MW-111B
ROD Cleanup Level
Drinking Water MCL

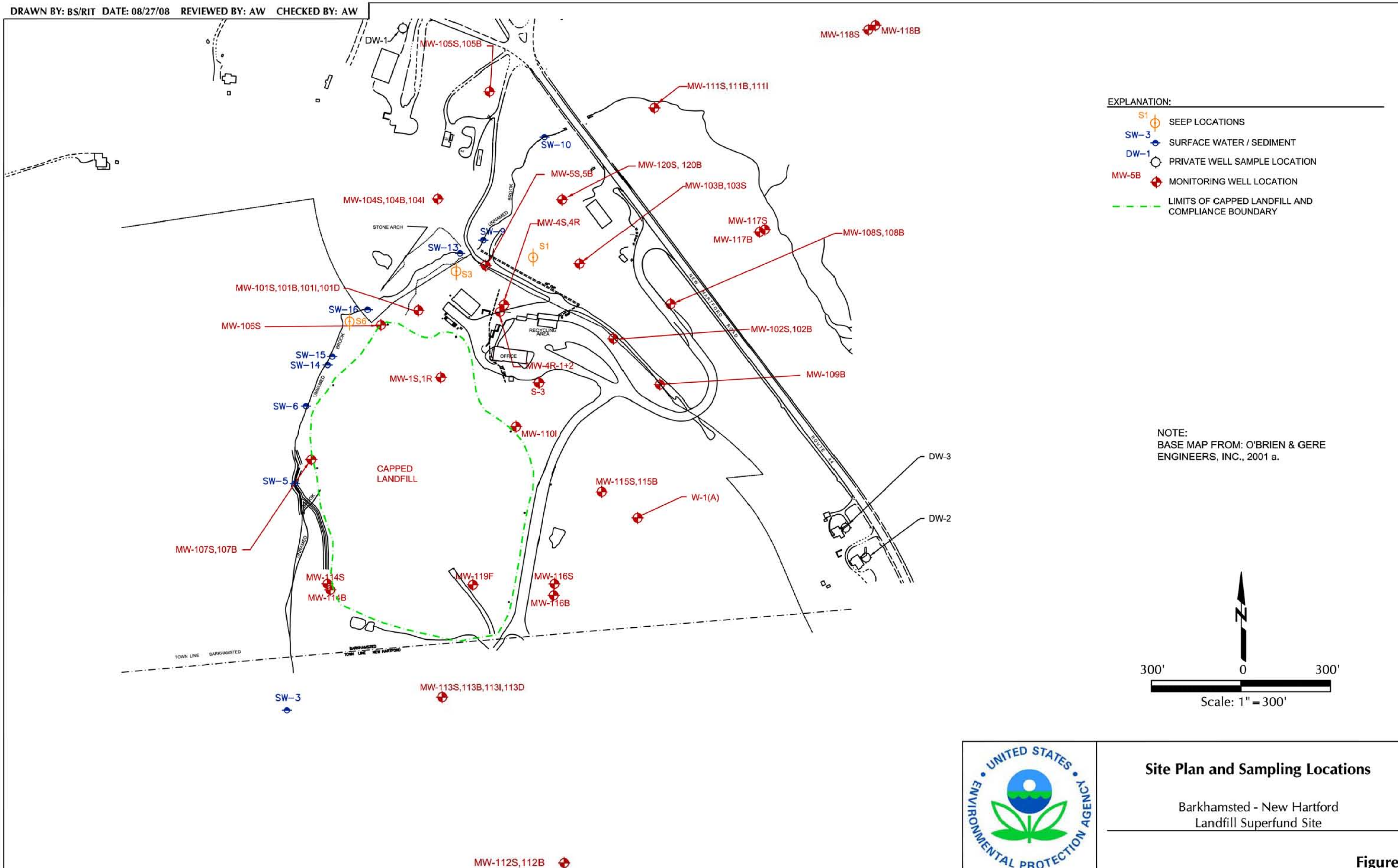

2,4-Dimethylphenol
1500
1250
1000
750
500
250
0
Concentration (ug/L)
1/1/2003
1/1/2004
12/31/2004
12/31/2005
12/31/2006
12/31/2007
Date
MW-1S
MW-101S
MW-101B
MW-5S
ROD Cleanup Level
Note: Drinking Water MCL Not Established



Arsenic (total)
0.1
0.01
0.001
Concentration (mg/L)
1/1/2003
1/1/2004
12/31/2004
12/31/2005
12/31/2006
12/31/2007
Date
MW-1S
MW-101S
MW-4S
ROD Cleanup Level
Drinking Water MCL



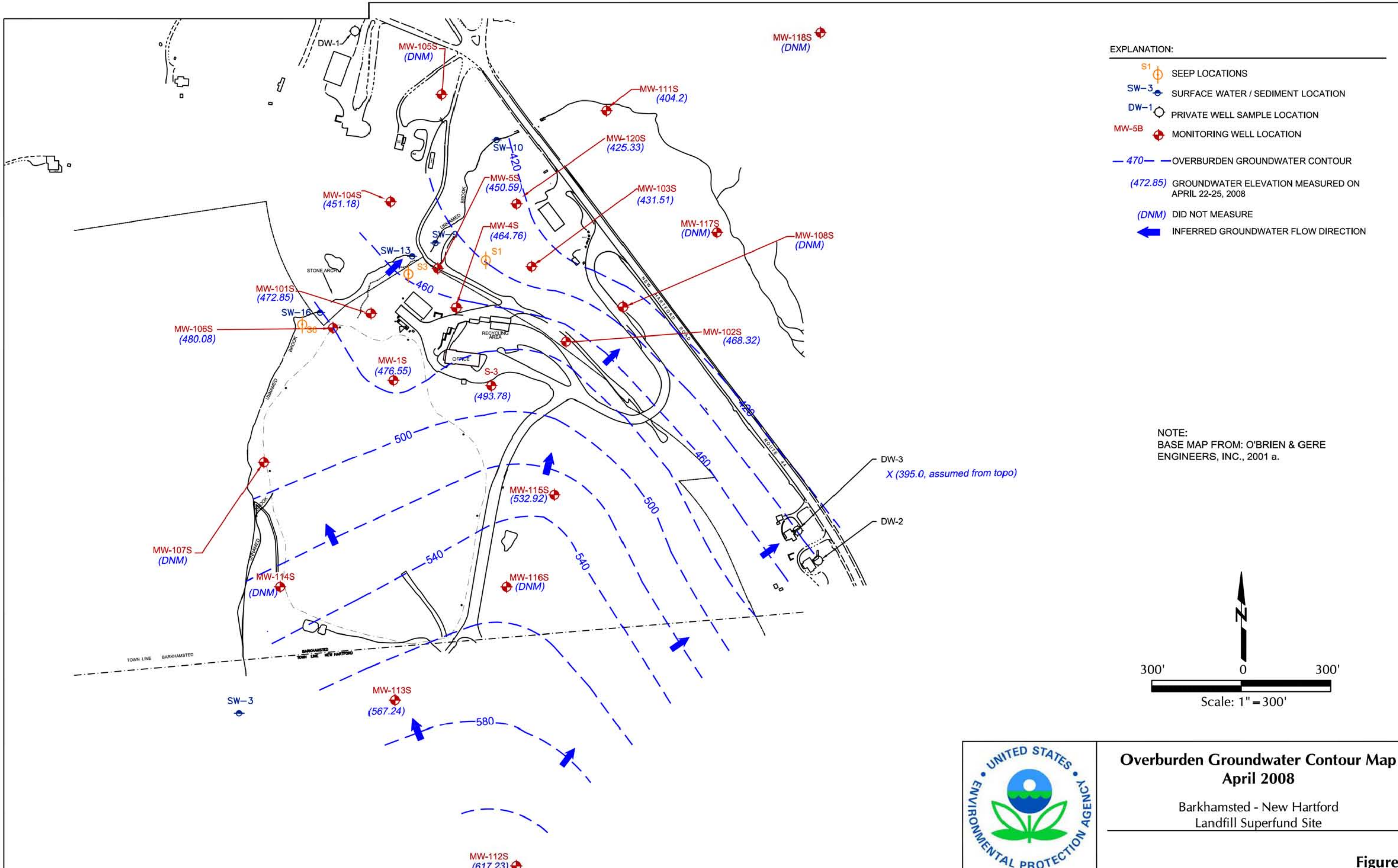

| | | | |
|---|---|---|---|
| DATE: 6/10/03 | TITLE: | | FIGURE: |
| DRAWN BY: PPH | **TOPOGRAPHIC MAP** | | |
| REVIEWED BY: AW | | | |
| APPROVED BY: AW | LOCATION: | | **1** |
| SCALE: AS NOTED | **BARKHAMSTED - NEW HARTFORD** | | |
| FILE NO: 010-12392 | **LANDFILL SUPERFUND SITE** | | |
| JOB NO: 010-12392 | | | |




**Site Plan and Sampling Locations**

Barkhamsted - New Hartford
Landfill Superfund Site

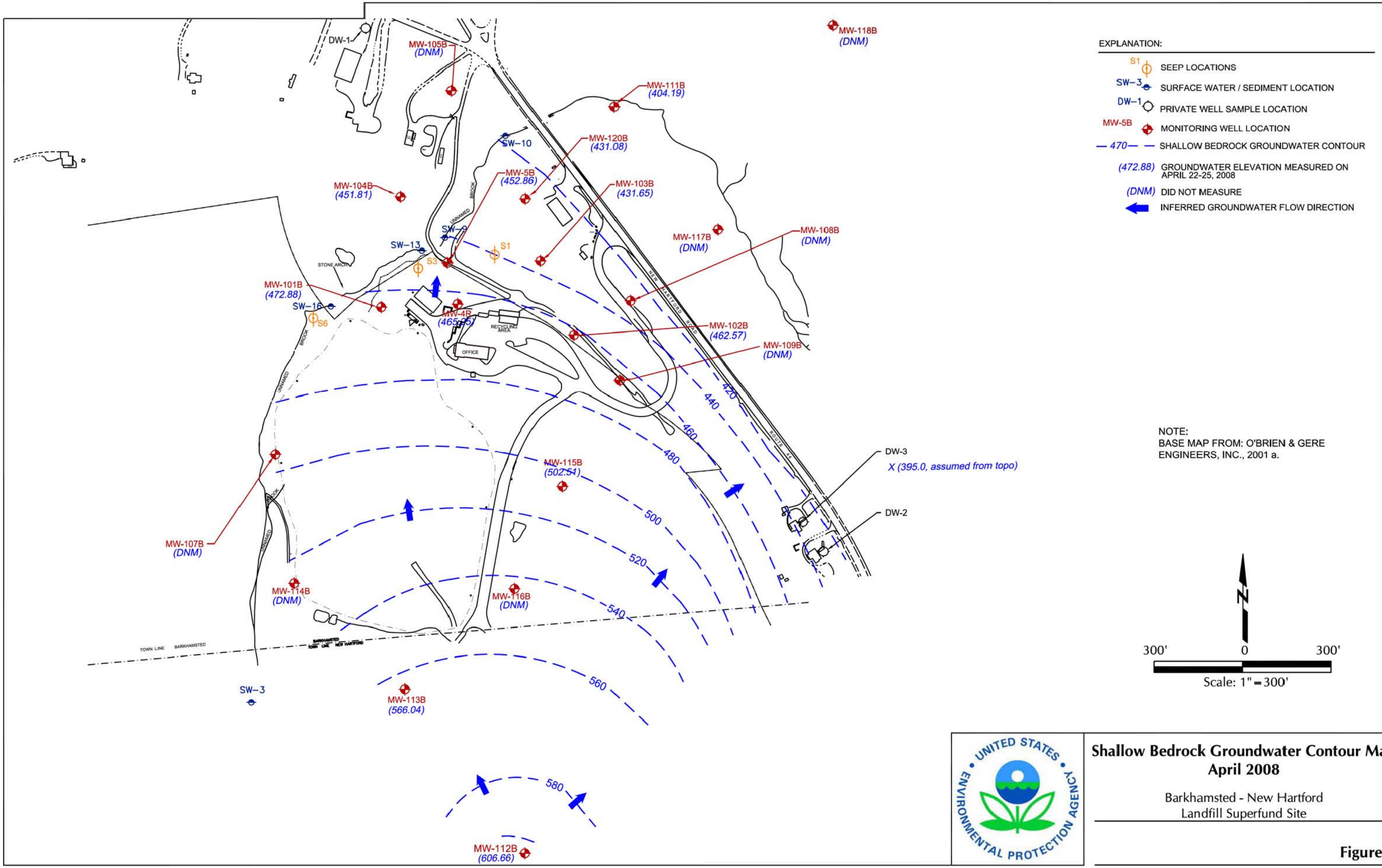
**Figure 2**




# Overburden Groundwater Contour Map
# April 2008

Barkhamsted - New Hartford
Landfill Superfund Site

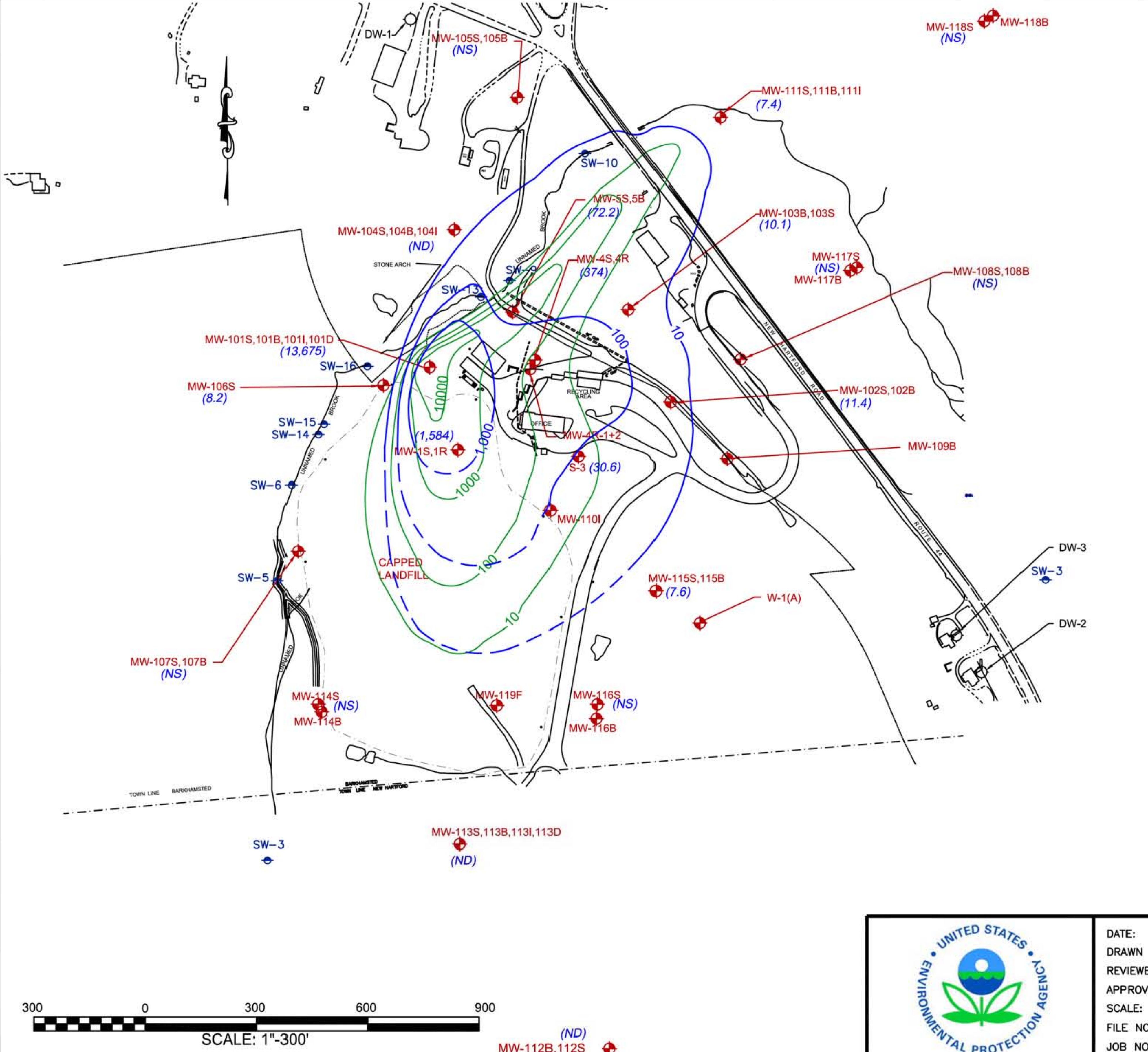
**Figure 3**




**Shallow Bedrock Groundwater Contour Map**
**April 2008**

Barkhamsted - New Hartford
Landfill Superfund Site

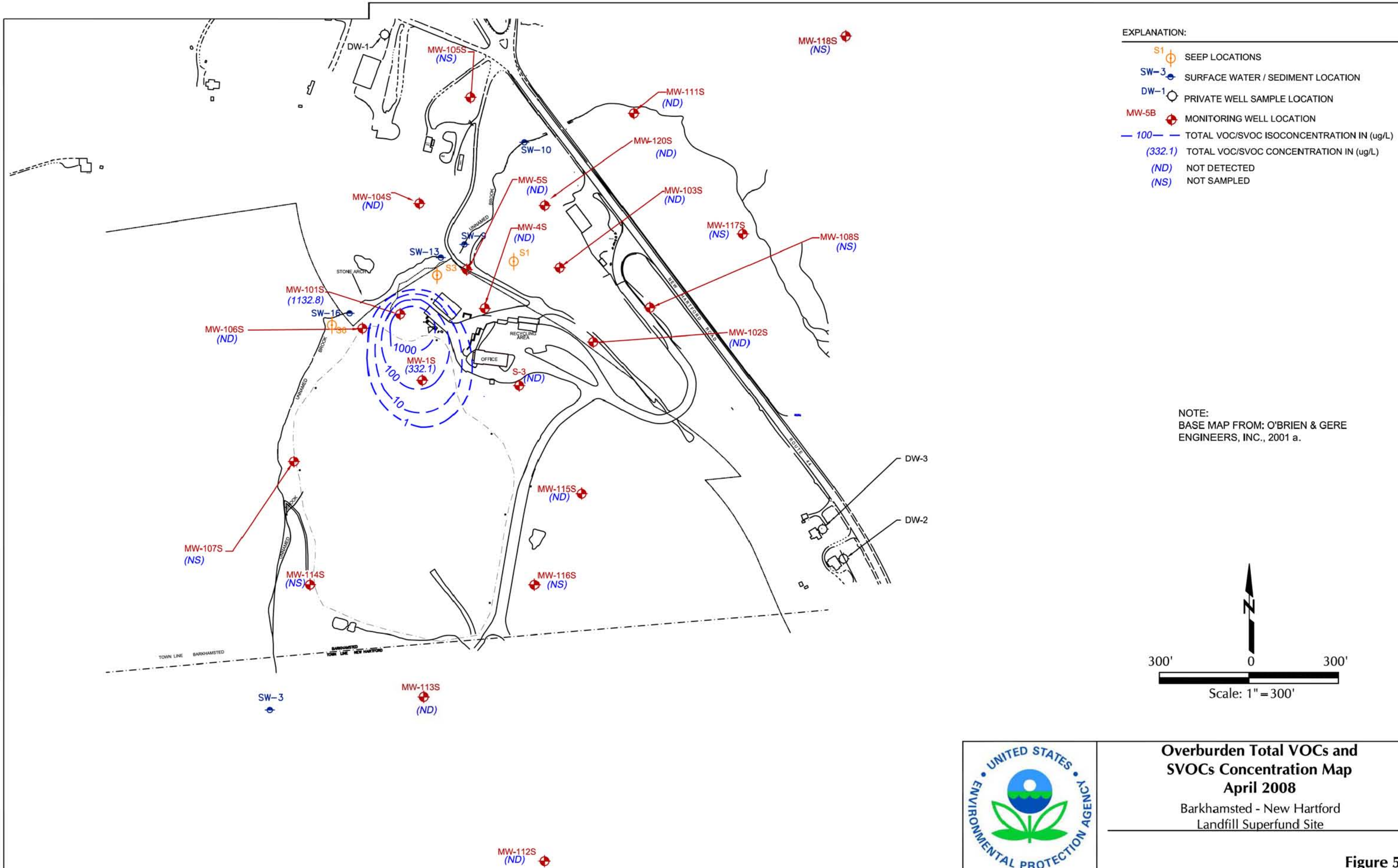
**Figure 4**




LEGEND:

- SW-3 SURFACE WATER / SEDIMENT
- DW-1 PRIVATE WELL SAMPLE LOCATION
- MW-5B MONITORING WELL LOCATION
- 10 TOTAL VOCs CONTOUR (ug/L) (DASHED WHERE INFERRED)
- (7.6) TOTAL VOC/SVOC CONCENTRATION IN (ug/L)
- (ND) NOT DETECTED
- (NS) NOT SAMPLED
- TOTAL VOC ISOCONCENTRATION (ug/L) -O'BRIEN & GERE DATA FEB. 2000

| | | | |
|---|---|---|---|
| UNITED STATES ENVIRONMENTAL PROTECTION AGENCY | DATE: 6/25/03<br>DRAWN BY: PPH<br>REVIEWED BY: AW<br>APPROVED BY: AW<br>SCALE: AS NOTED<br>FILE NO: 010-12392<br>JOB NO: | TITLE: **OVERBURDEN TOTAL VOCs and SVOCs CONCENTRATION MAP - APRIL 30 - MAY 8, 2003**<br>LOCATION: **BARKHAMSTED - NEW HARTFORD LANDFILL SUPERFUND SITE** | FIGURE **5** |

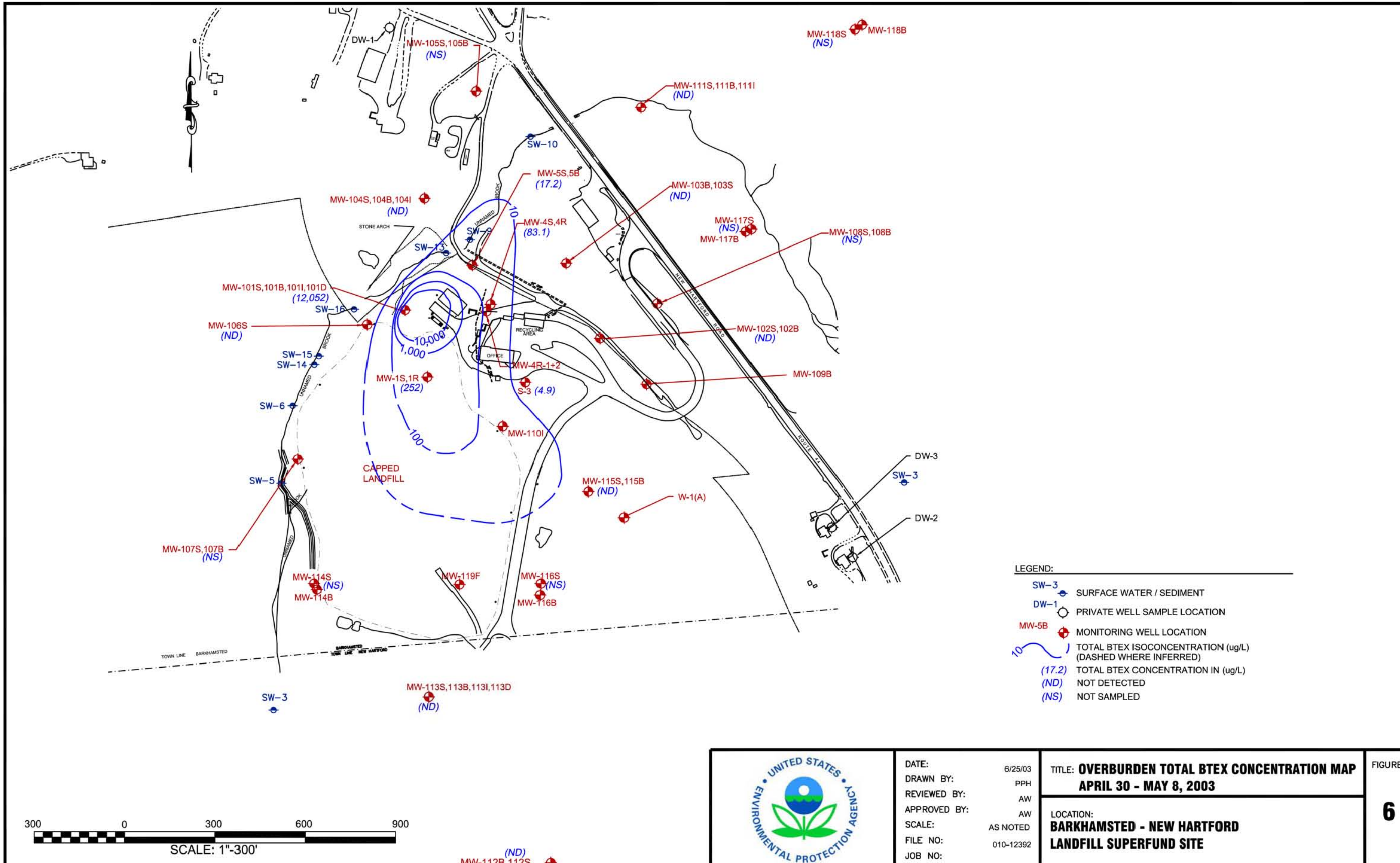



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**Overburden Total VOCs and SVOCs Concentration Map April 2008**

Barkhamsted - New Hartford Landfill Superfund Site

**Figure 5A**



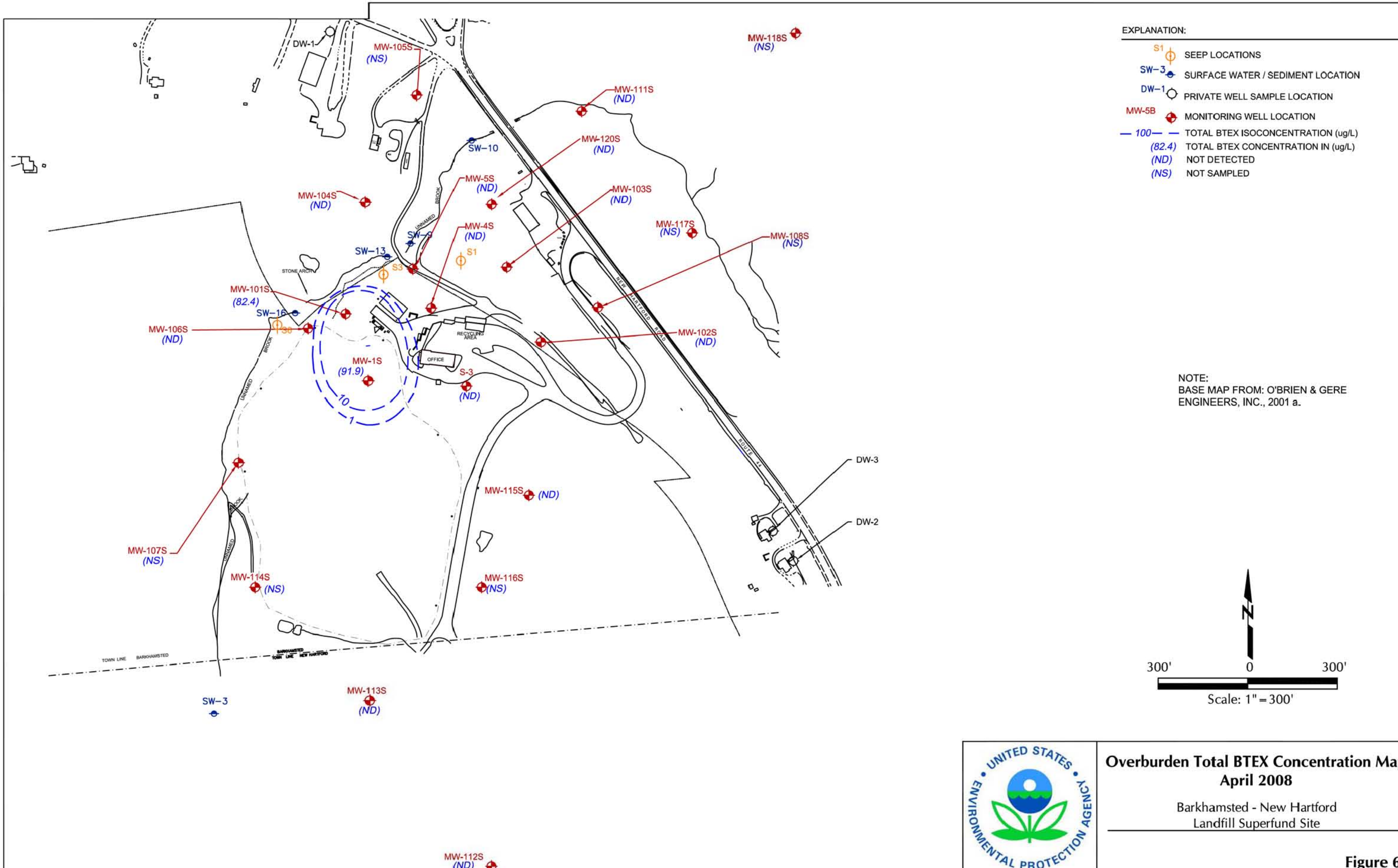

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

| | |
|---|---|
| DATE: | 6/25/03 |
| DRAWN BY: | PPH |
| REVIEWED BY: | AW |
| APPROVED BY: | AW |
| SCALE: | AS NOTED |
| FILE NO: | 010-12392 |
| JOB NO: | |

TITLE: **OVERBURDEN TOTAL BTEX CONCENTRATION MAP APRIL 30 - MAY 8, 2003**

LOCATION: **BARKHAMSTED - NEW HARTFORD LANDFILL SUPERFUND SITE**

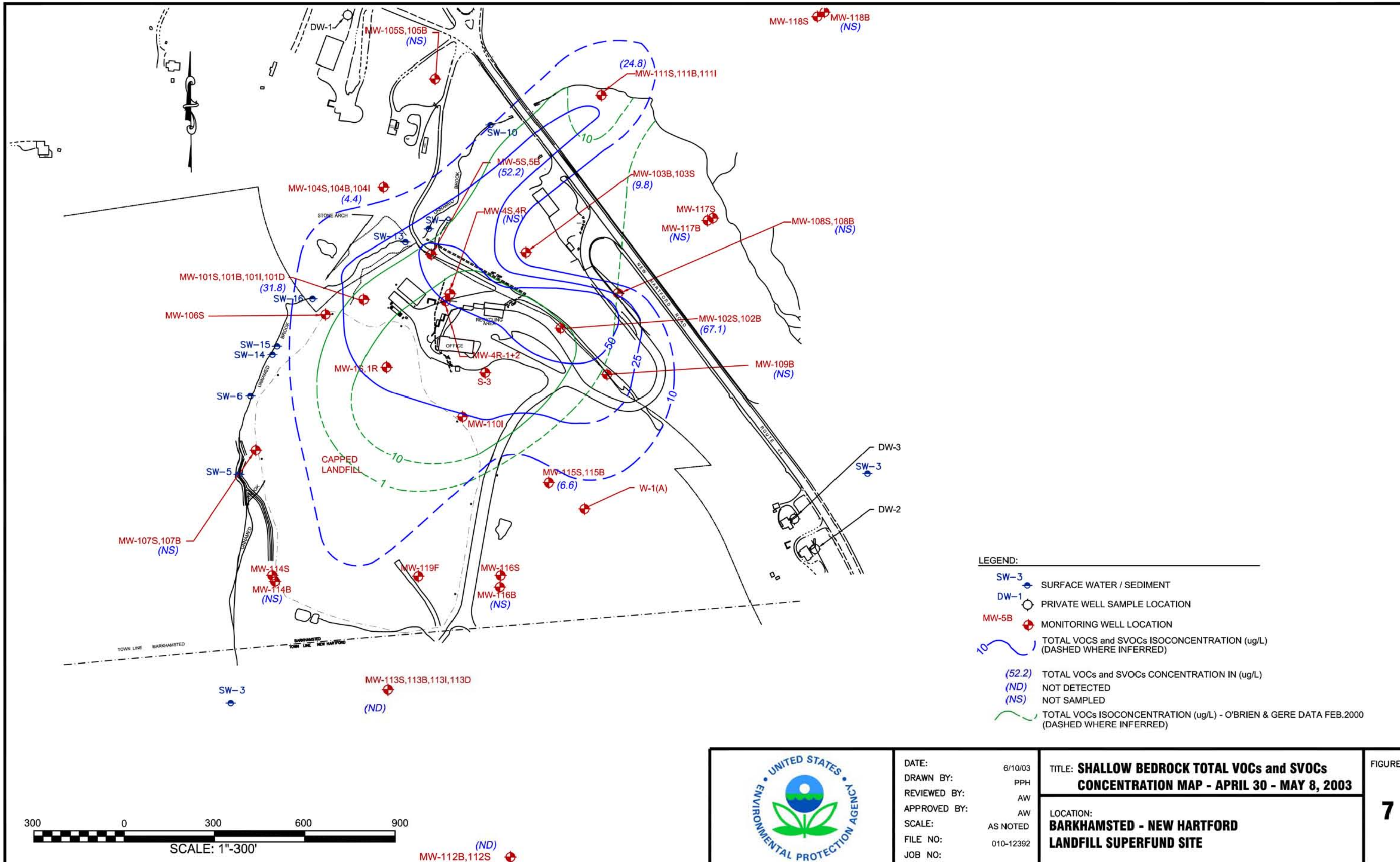
FIGURE **6**




**Overburden Total BTEX Concentration Map**
**April 2008**

Barkhamsted - New Hartford
Landfill Superfund Site

**Figure 6A**

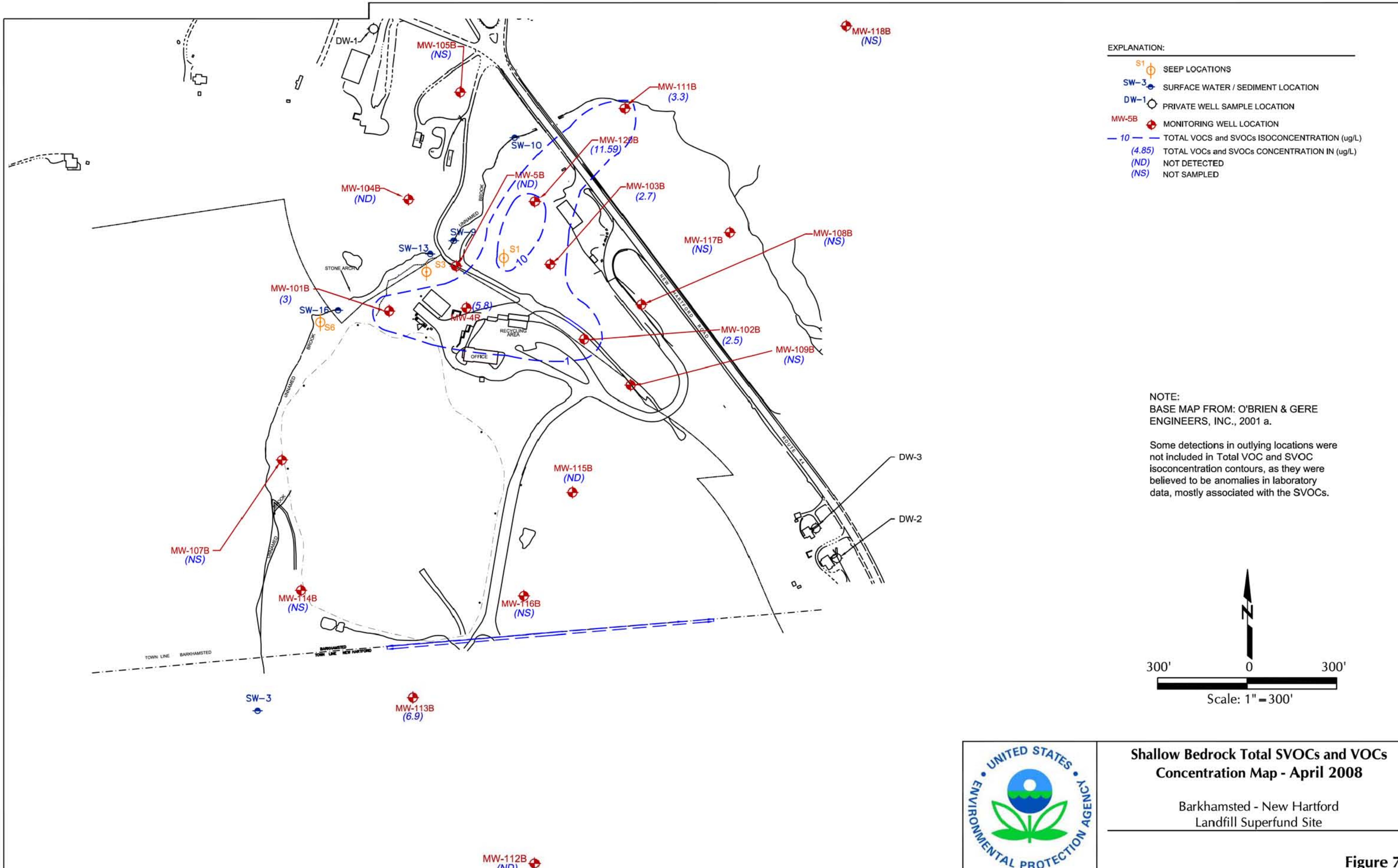



| | |
|---|---|
| DATE: | 6/10/03 |
| DRAWN BY: | PPH |
| REVIEWED BY: | AW |
| APPROVED BY: | AW |
| SCALE: | AS NOTED |
| FILE NO: | 010-12392 |
| JOB NO: | |

TITLE: **SHALLOW BEDROCK TOTAL VOCs and SVOCs CONCENTRATION MAP - APRIL 30 - MAY 8, 2003**

LOCATION: **BARKHAMSTED - NEW HARTFORD LANDFILL SUPERFUND SITE**

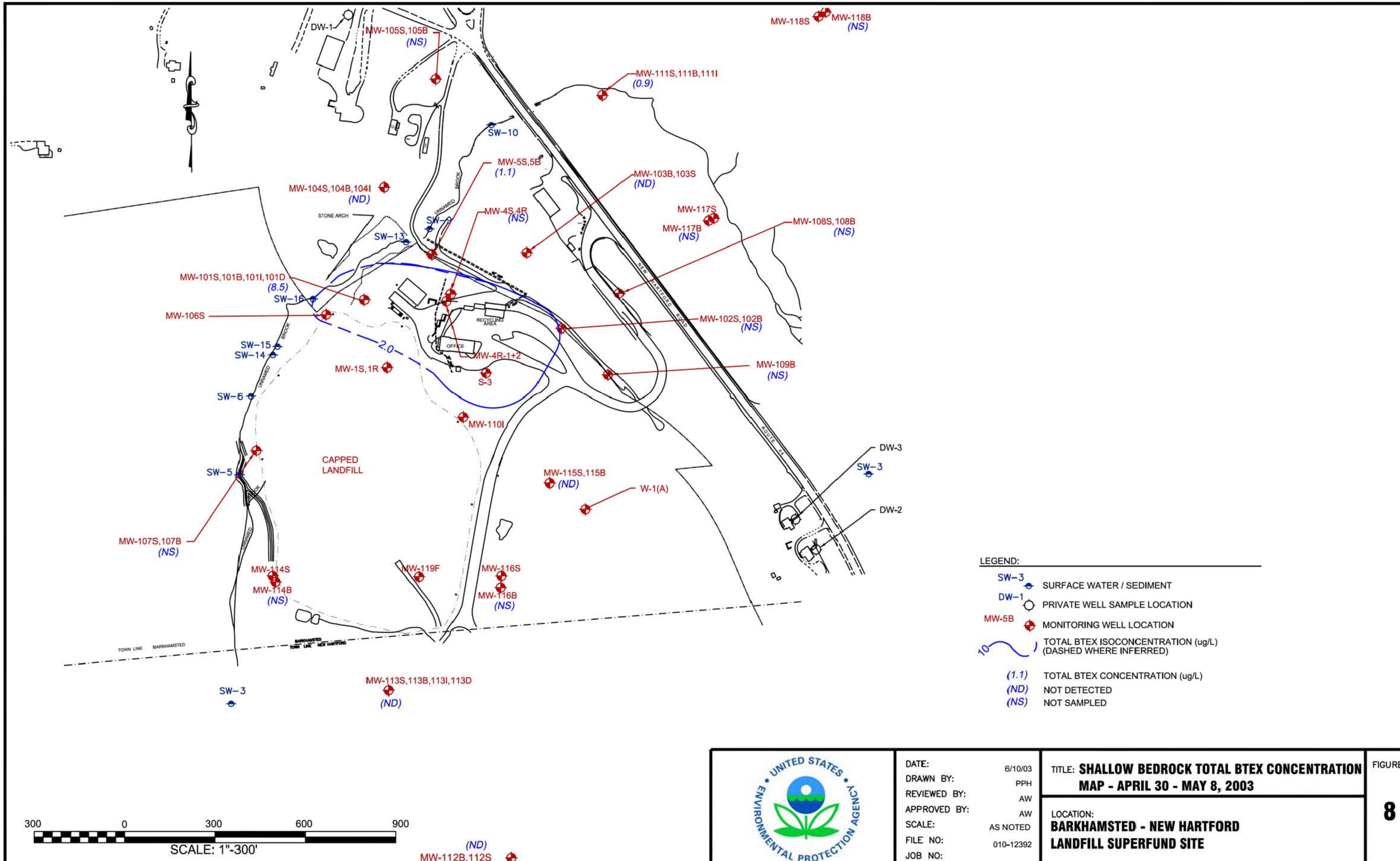
FIGURE **7**




**Shallow Bedrock Total SVOCs and VOCs Concentration Map - April 2008**

Barkhamsted - New Hartford Landfill Superfund Site

**Figure 7A**

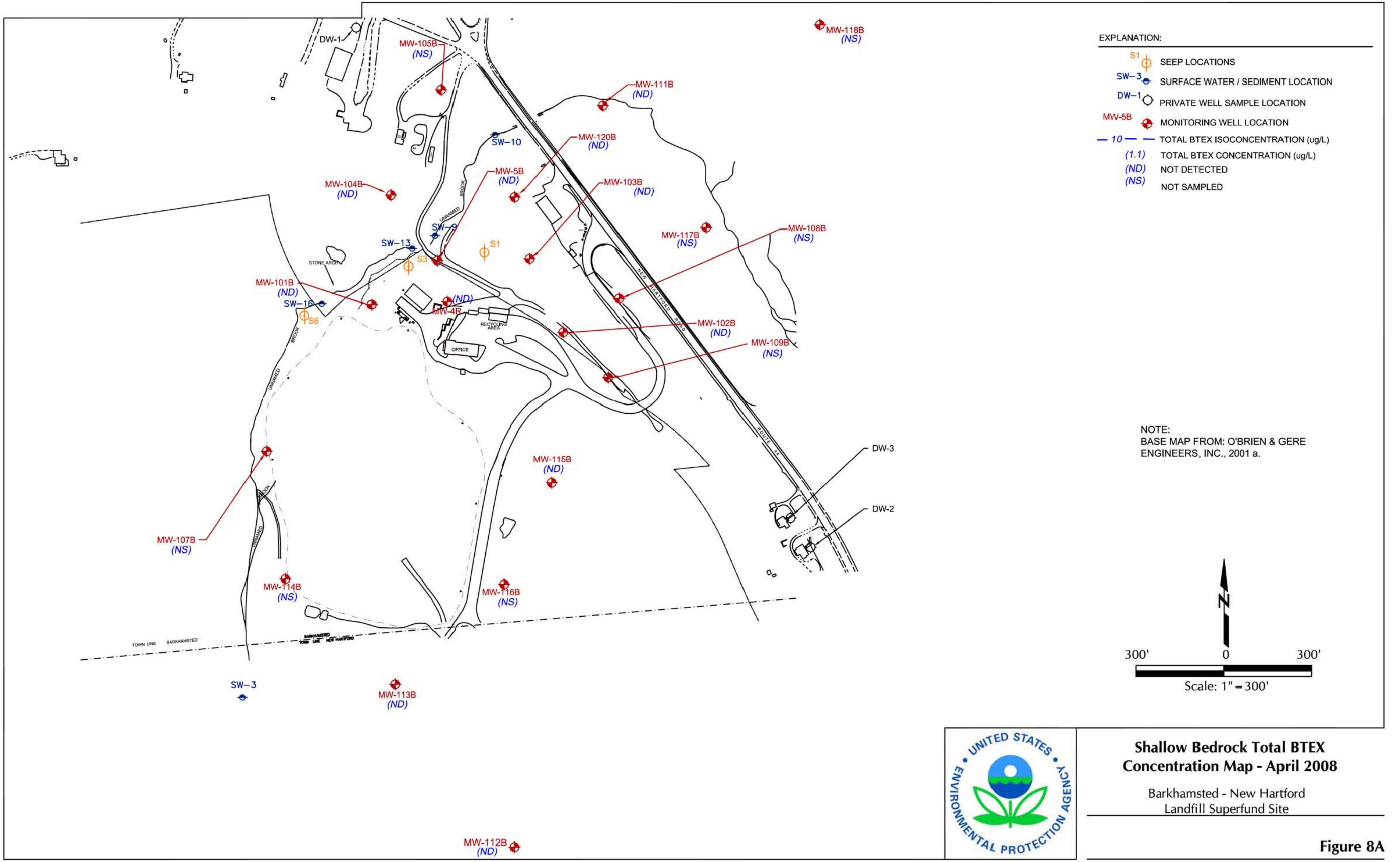



| | |
|---|---|
| DATE: | 6/10/03 |
| DRAWN BY: | PPH |
| REVIEWED BY: | AW |
| APPROVED BY: | AW |
| SCALE: | AS NOTED |
| FILE NO: | 010-12392 |
| JOB NO: | |

TITLE: **SHALLOW BEDROCK TOTAL BTEX CONCENTRATION MAP - APRIL 30 - MAY 8, 2003**

LOCATION: **BARKHAMSTED - NEW HARTFORD LANDFILL SUPERFUND SITE**

FIGURE **8**

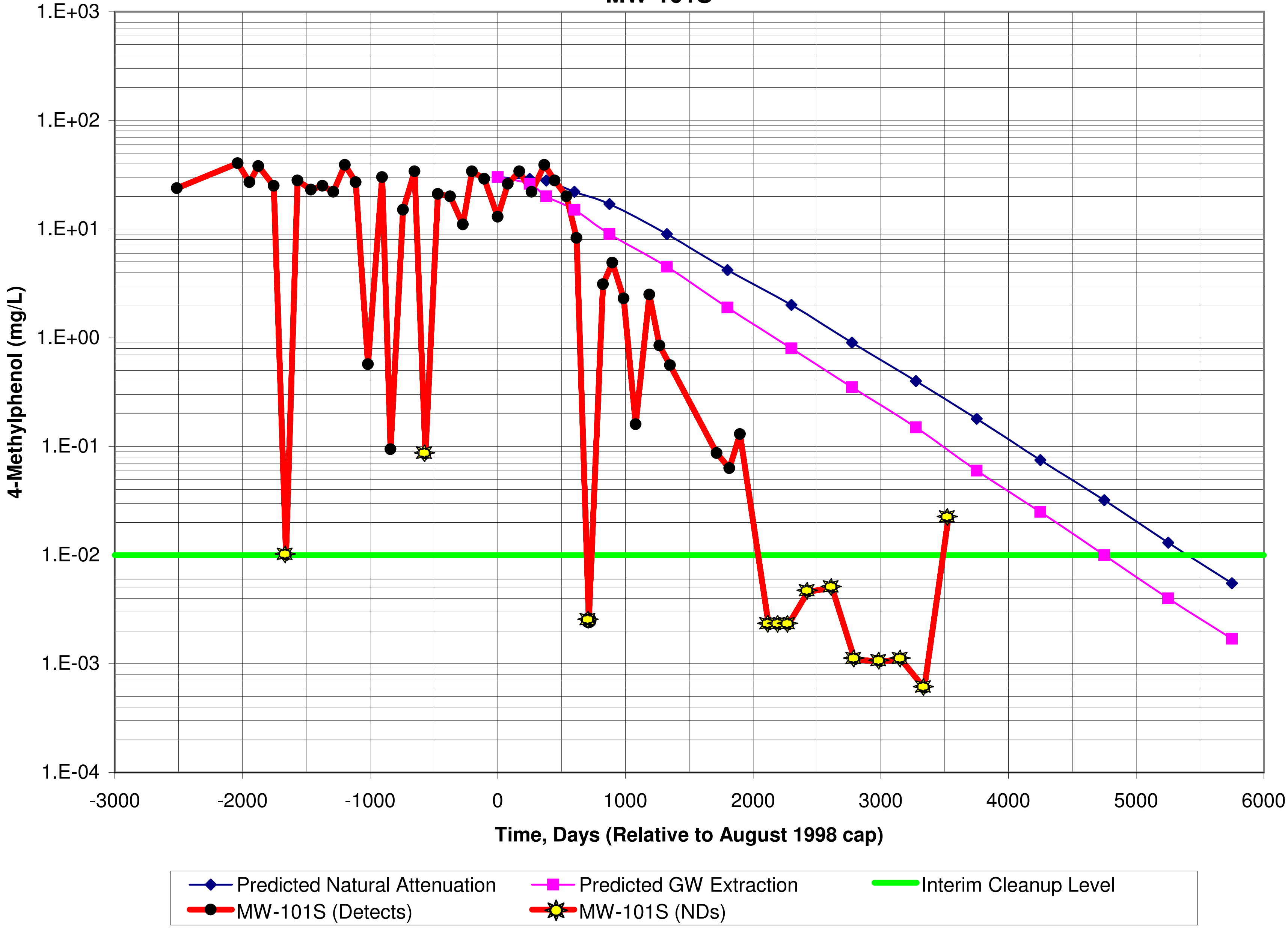



**Shallow Bedrock Total BTEX Concentration Map - April 2008**

Barkhamsted - New Hartford Landfill Superfund Site

**Figure 8A**

**Figure 9 - Simulated and Observed Concentrations of 4-Methylphenol**
**Overburden Well**
**MW-101S**



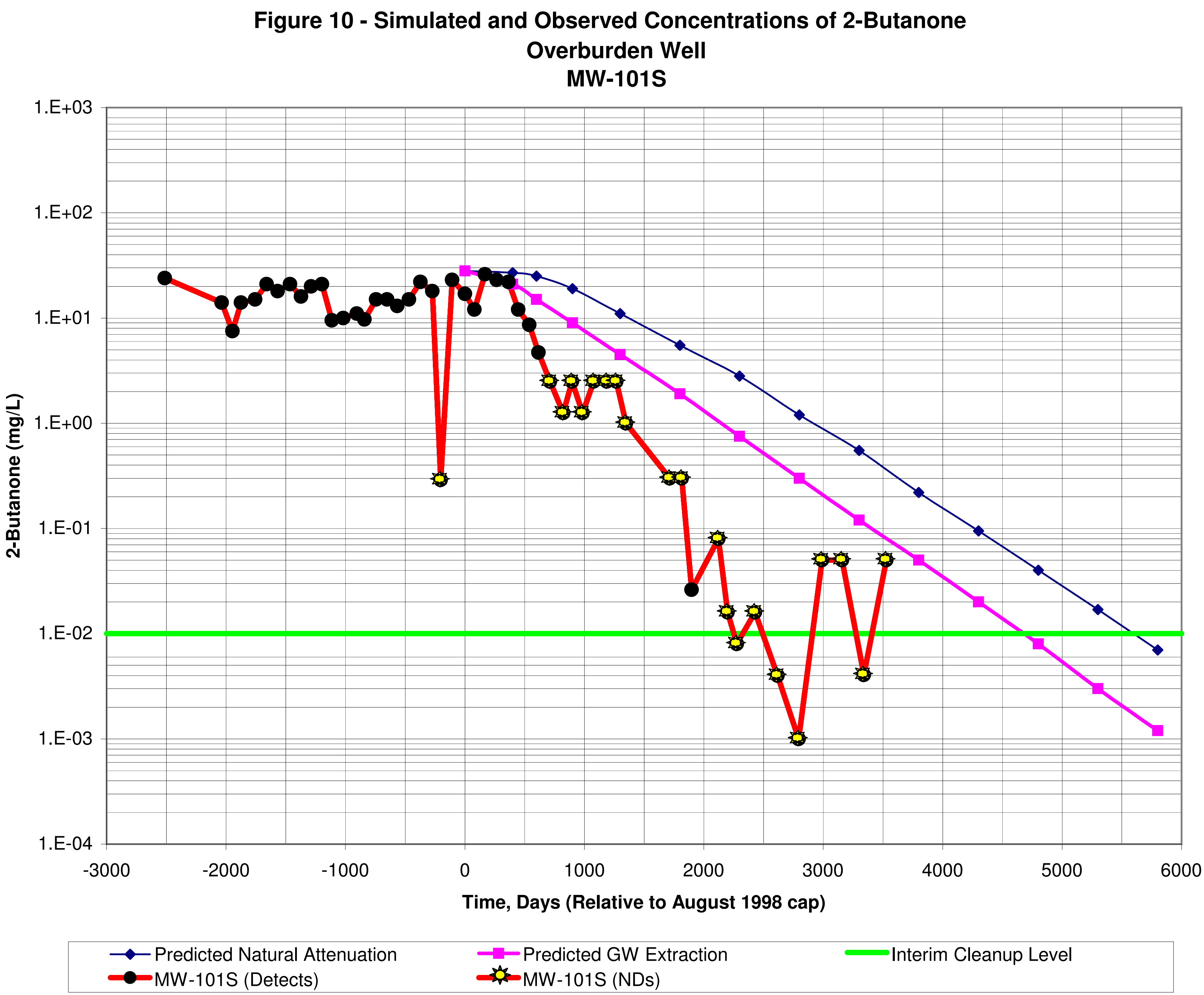
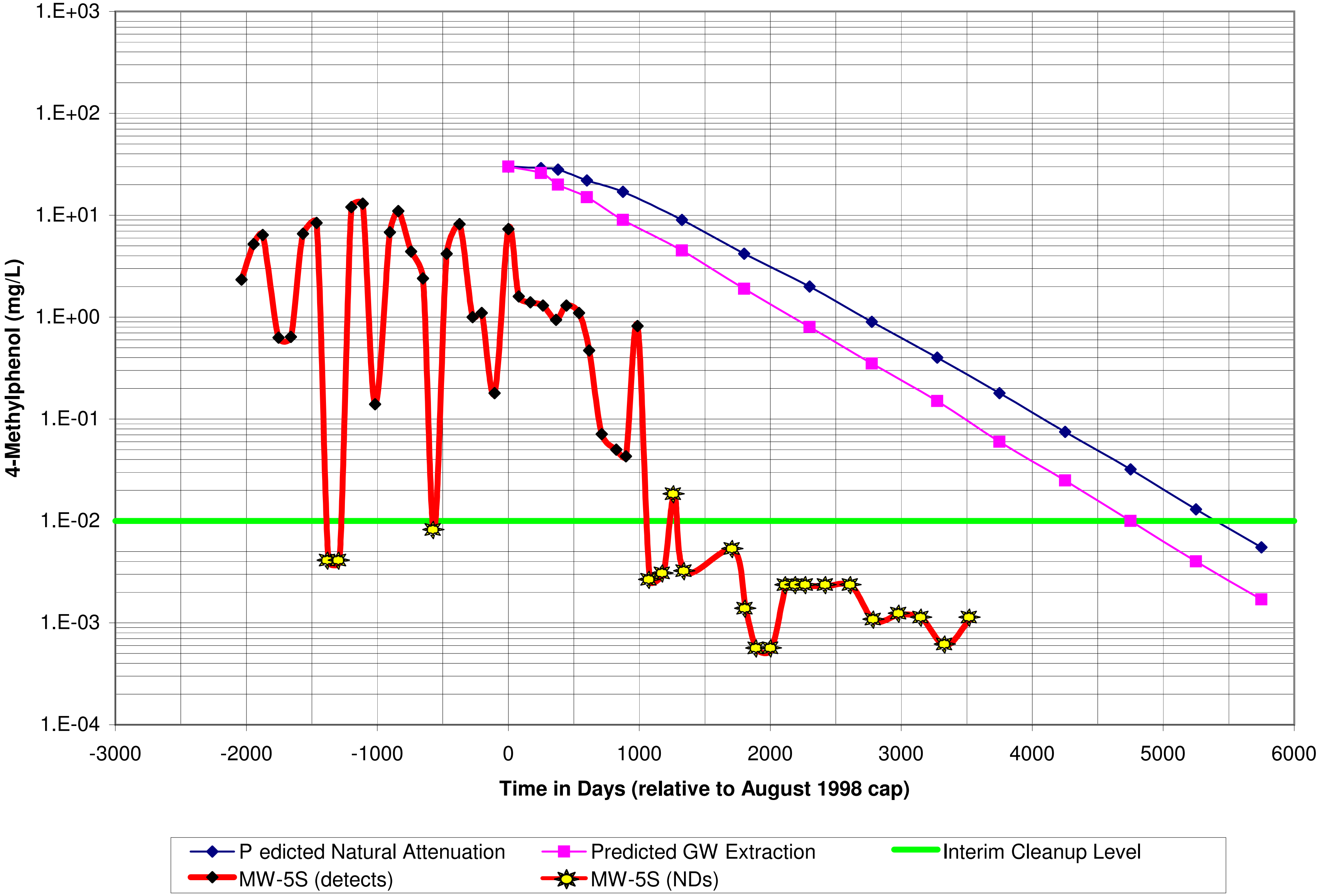


Figure 10 - Simulated and Observed Concentrations of 2-Butanone
Overburden Well
MW-101S
1.E+03
1.E+02
1.E+01
1.E+00
1.E-01
1.E-02
1.E-03
1.E-04
2-Butanone (mg/L)
-3000
-2000
-1000
0
1000
2000
3000
4000
5000
6000
Time, Days (Relative to August 1998 cap)
Predicted Natural Attenuation
Predicted GW Extraction
Interim Cleanup Level
MW-101S (Detects)
MW-101S (NDs)

Figure 11 - Simulated vs Observed Concentrations of 4-Methylphenol
Overburden Well
MW-5S



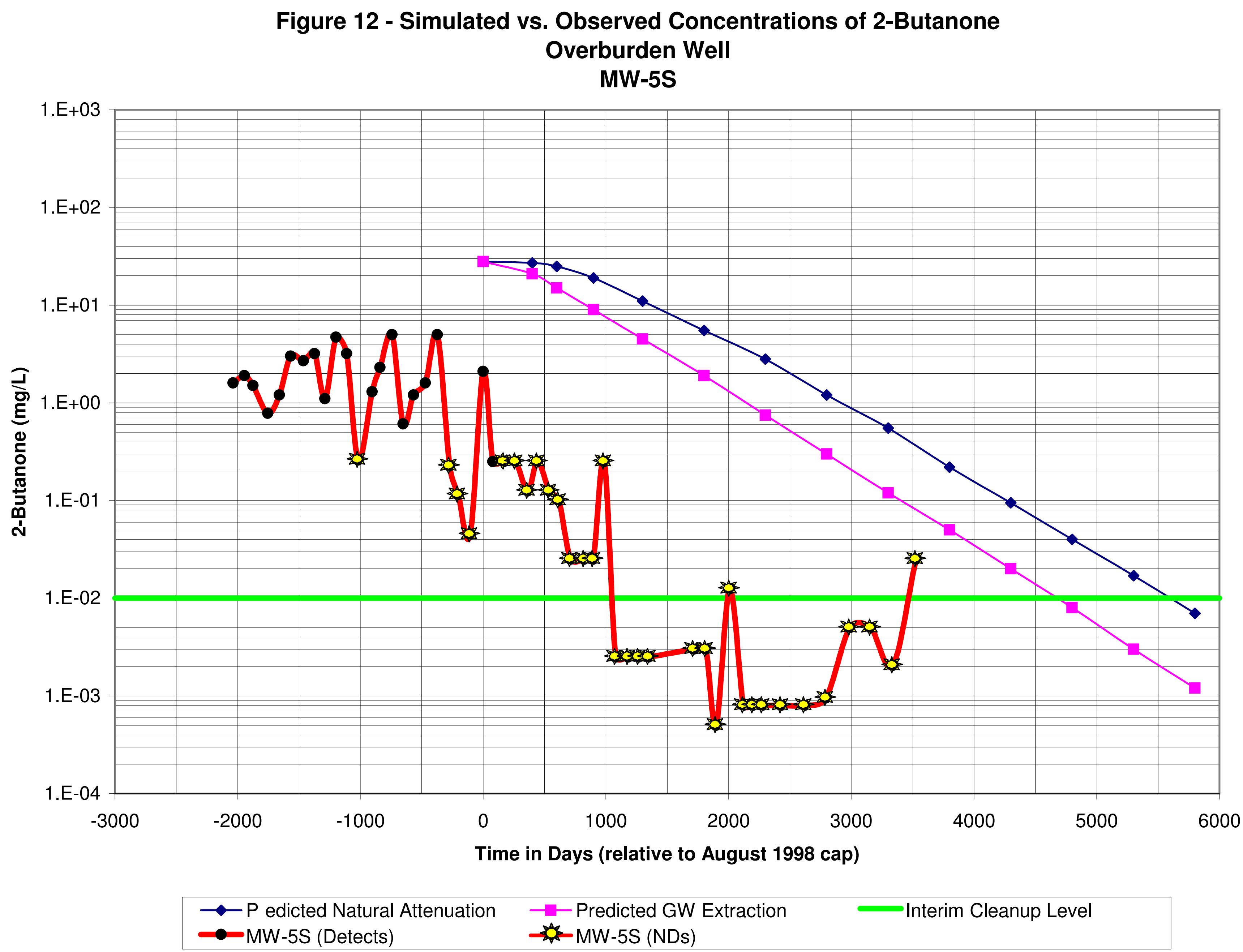


Figure 12 - Simulated vs. Observed Concentrations of 2-Butanone
Overburden Well
MW-5S
1.E+03
1.E+02
1.E+01
1.E+00
1.E-01
1.E-02
1.E-03
1.E-04
2-Butanone (mg/L)
-3000
-2000
-1000
0
1000
2000
3000
4000
5000
6000
Time in Days (relative to August 1998 cap)
P edicted Natural Attenuation
Predicted GW Extraction
Interim Cleanup Level
MW-5S (Detects)
MW-5S (NDs)

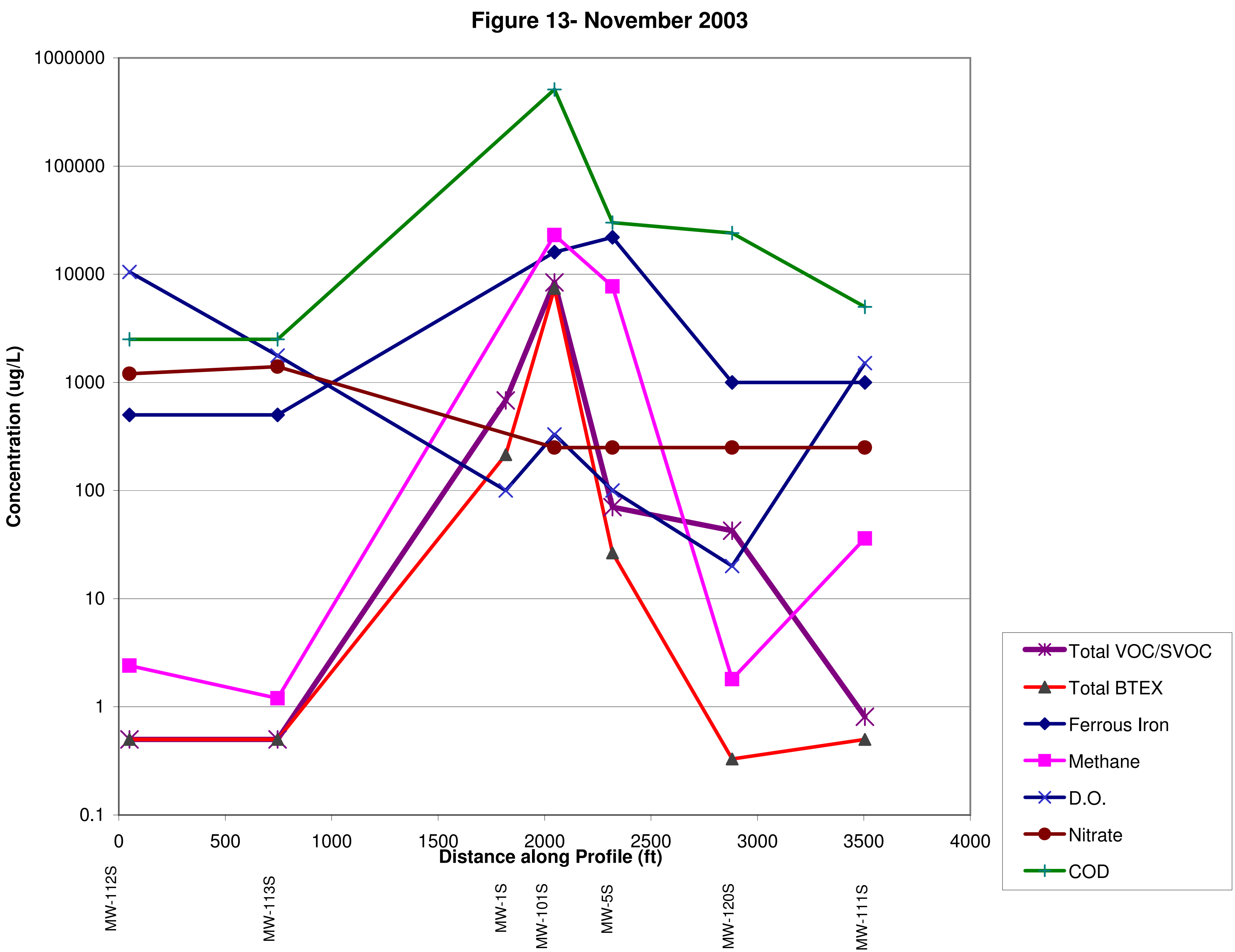


Figure 13- November 2003
Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
0.1
0
500
1000
1500
2000
2500
3000
3500
4000
Distance along Profile (ft)
MW-112S
MW-113S
MW-1S
MW-101S
MW-5S
MW-120S
MW-111S
Total VOC/SVOC
Total BTEX
Ferrous Iron
Methane
D.O.
Nitrate
COD

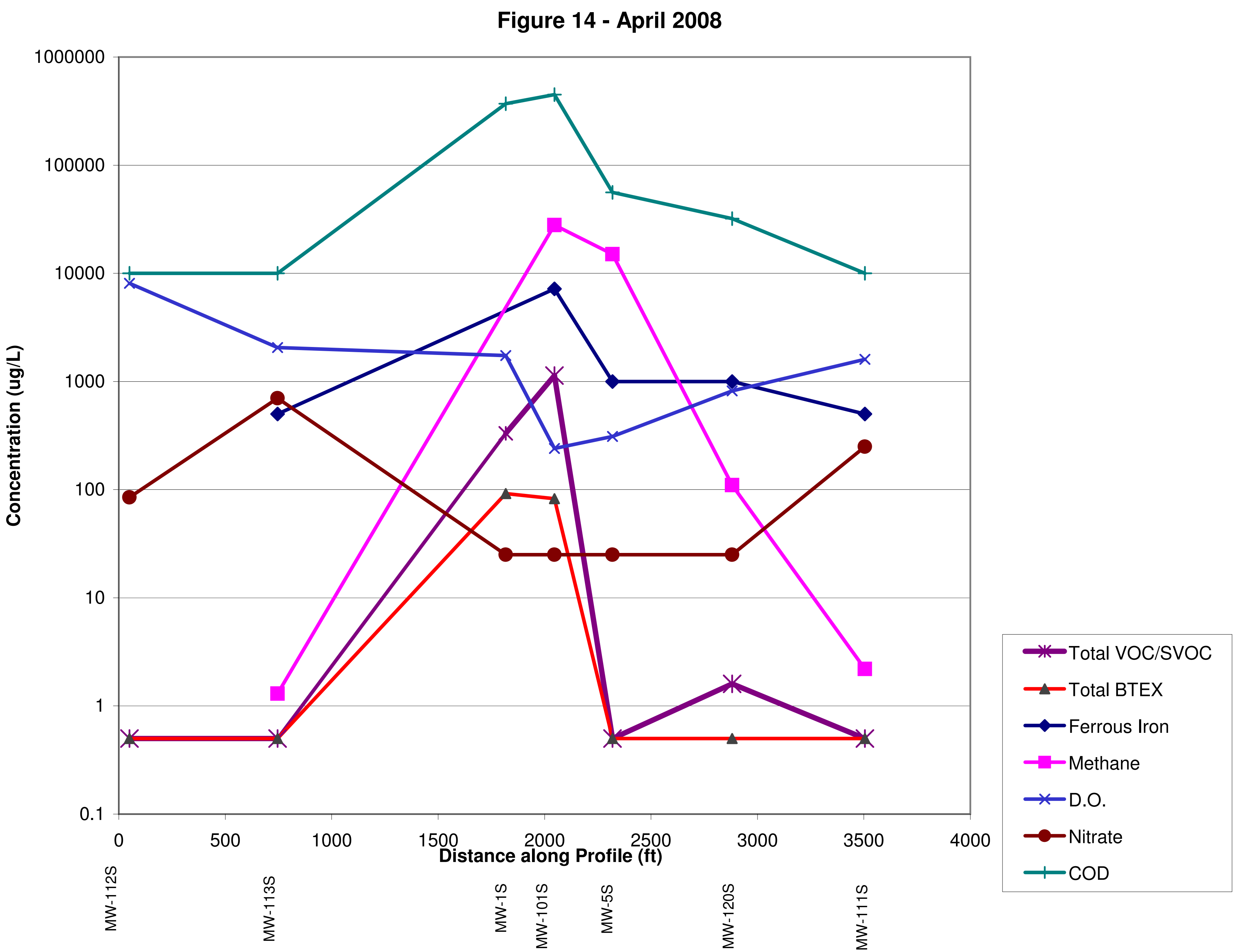


Figure 14 - April 2008
Concentration (ug/L)
1000000
100000
10000
1000
100
10
1
0.1
0
500
1000
1500
2000
2500
3000
3500
4000
Distance along Profile (ft)
MW-112S
MW-113S
MW-1S
MW-101S
MW-5S
MW-120S
MW-111S
Total VOC/SVOC
Total BTEX
Ferrous Iron
Methane
D.O.
Nitrate
COD

## TABLE 2: CONTAMINANTS OF CONCERN AND OTHER TARGET ANALYTES

**Medium/Matrix:** Groundwater

| | | | | |
|---|---|---|---|---|
| *Benzene*[1] | *Toluene*[1] | Diethyl pthalate[2] | Cadmium[2] | Carbon disulfide[2] |
| *1,2-dichloroethane*[1] | Ethylbenzene[2] | Di-n-octyl pthalate[2] | Calcium[2] | Chlorobenzene[2] |
| *1,2-dichloropropane*[1] | o-Xylene[2] | Napthalene[2] | Cobalt[2] | Cis-1,2-Dichloroethene[2] |
| *Chloroethane*[1] | p-Xylene[2] | Phenol[2] | Copper[2] | Styrene[2] |
| *Chloroform*[1] | m-Xylene[2] | *Arsenic*[1] | Iron[2] | *1,4-dichlorobenzene*[1] |
| *Chloromethane*[1] | Acetone[2] | *Chromium (total)*[1] | Magnesium[2] | 1,2-dichlorobenzene[2] |
| *Dibromochloromethane*[1] | *2-Butanone (MEK)*[1] | *Lead*[1] | Mercury[2] | *Bis(2-ethyl hexyl) pthalate*[1] |
| *Methylene chloride*[1] | *4-methyl-2-pentanone*[1] | *Manganese*[1] | Nickel[2] | *2,4-dimethylphenol*[1] |
| *Trichloroethene (TCE)*[1] | 1,1,1-Trichloroethane[2] | Aluminum[2] | Potassium[2] | *4-methylphenol*[1] |
| *Vinyl chloride (VC)*[1] | 1,1-Dichloroethane[2] | Antimony[2] | Selenium[2] | 2-methylnapthalene[2] |
| Tetrachloroethene | 2-Hexanone[2] | Barium[2] | Silver[2] | 2-methylphenol[2] |
| Trans-1,2-dichloroethene | Bromomethane[2] | Beryllium[2] | Sodium[2] | Benzoic acid[2] |
| Thallium[2] | Dissolved ethene[3] | Chemical Oxygen Demand (COD)[3] | Vanadium[2] | Zinc[2] |
| Dissolved hydrogen[3] | Ferrous Iron[3] | Dissolved methane[3] | Nitrite[3] | Sulfate[3] |
| Sulfide[3] | Nitrate[3] | Dissolved ethane[3] | | |

**NOTES**

[1] Project action limit defined by Clean-Up levels designated in ROD (US EPA 2001b)

[2] Project action limit defined by Clean-Up levels designated in FS (O'Brien & Gere, 2001a)

[3] Monitored Natural Attenuation (MNA) Parameters

*Contaminants of Concern (italics*) defined in ROD (US EPA 2001b)

## TABLE 2: CONTAMINANTS OF CONCERN AND OTHER TARGET ANALYTES (CONT'D)

**Medium/Matrix:** Leachate and Groundwater

Alkalinity
Ammonia
Chemical Oxygen Demand
Specific Conductivity
Hardness (Metals)
pH
Total Sulfate
Chloride
Nitrate
Total Dissolved Solids
Total Suspended Solids

**Medium/Matrix:** Sediment

| | | |
|---|---|---|
| Benzo(a)anthracene | Arochlor-1254 | Aluminum |
| Benzo(b)fluoranthene | Gamma-chlordane | Antimony |
| Benzo(a)pyrene | 4, 4'-DDE | Arsenic |
| Indeno(1,2,3-cd)pyrene | 4, 4'-DDT | Barium |
| Phenanthrene | Endosulfan II | Beryllium |
| Pyrene | Endrin | Chromium |
| Cobalt | Lead | Vanadium |
| Copper | Manganese | Zinc |
| Iron | Nickel | |

**Medium/Matrix:** Leachate Seeps/Surface Water

| | | |
|---|---|---|
| Chloromethane | Benzene | Arsenic |
| 1,2-Dichloropropane | Bromodichloromethane | Aluminum |
| Acetone | Chloroethane | Barium |
| Carbon disulfide | Chloroform | Copper |
| Methylene chloride | 2,4-Dimethylphenol | Iron |
| Xylenes | Bis(2-ethylhexyl)phthalate | Cadmium |
| Phenol | Lead | Zinc |
| Chlorobenzene | Manganese | Copper |
| 1,1,-Dichloroethane | Zinc | Chromium |
| Hardness (Metals) | 4, 4'-DDE | 4, 4'-DDT |
| Arochlor-1254 | | |

# Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

## Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-1S | | | | | | | | | | | | | | | | | | | |
| | 5/5/03 | <0.4 | <0.4 | **4.29** | <12 | <1.2 | <9.6 | **10.5** | **8.35** | <0.4 | <0.4 | <0.4 | <0.4 | **9.84** | <0.4 | <0.4 | **9.3** | **803** | <21.4 |
| | 8/12/03 | <0.4 | <0.4 | **4.75** | <12 | <1.2 | <9.6 | **13.7** | **9.17** | <0.4 | <0.4 | <0.4 | <0.4 | **8.91** | <0.4 | <0.4 | <45.5 | **663** | <148.4 |
| | 11/4/03 | <0.4 | <0.4 | **3.97** | <2 | **0.88 J** | **11 J** | **11** | **3.97** | <0.4 | <0.8 | <0.4 | **0.21 J** | **11.1** | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/26/04 | <1.0 | <1.0 | **4.2** | <25.0 | <10.0 | <25.0 | **11.5** | **5.9** | <1.0 | <2.0 | <1.0 | <5.0 | **8.7** | <1.0 | <1.0 | <6.6 | **630** | <2.6 |
| | 6/16/04 | <6.4 | <3.6 | <7.2 | <64 | <96 | <184 | <2.8 | <15.2 | <6.4 | <4.4 | <5.2 | <6.4 | <6.4 | <7.2 | <16 | <2.0 | **530** | <9.2 |
| | 9/1/04 | <0.64 | <0.36 | **5.6** | <6.4 | <9.6 | <18.4 | **12** | **2.8** | <0.64 | <0.44 | <0.52 | <0.64 | **7.3** | <0.72 | <1.6 | <2.0 | **390** | <9.2 |
| | 11/16/04 | **0.67** | **0.64** | **4.8** | <3.2 | <4.8 | <9.2 | **11** | **3.6** | <0.32 | <0.22 | <0.26 | <0.32 | **6.8** | <0.36 | <0.8 | <2.0 | **450** | <9.2 |
| | 4/18/05 | **0.53** | <0.18 | **4.5** | <3.2 | <4.8 | <9.2 | **9.9** | **8.1** | <0.32 | <0.22 | <0.26 | <0.32 | **12** | <0.36 | <0.8 | <40 | **600** | <184 |
| | 10/24/05 | <3.2 | <1.8 | **6.1 J** | <32 | <48 | <92 | **12** | <7.6 | <3.2 | <2.2 | <2.6 | <3.2 | **9** | <3.6 | <8 | <2.2 | **360** | <10.2 |
| | 4/18/06 | <0.34 | <0.68 | **4.3** | <7.6 | <4 | <15.2 | **8.0** | <0.88 | <0.6 | <2 | <0.34 | <2 | **7.8** | <0.76 | <0.9 | <3.8 | **200** | <5.8 |
| | 10/31/06 | <2.0 | <2.0 | <2 | <20 | <20 | <26 | **10** | <2.2 | <1.88 | <2.6 | <1.0 | **3.2 J** | **5.6** | <2.0 | <2.0 | <5 | **140** | <4.4 |
| | 4/17/07 | <2.0 | <2.0 | <2 | <20 | <20 | <26 | **8.5** | <2.2 | <1.88 | <2.6 | <1.0 | <1.98 | **5.1** | <2.0 | <2.0 | **3.6 J** | **260** | <4.4 |
| | 10/16/07 | <4 | <4 | **3.8 J** | <16.2 | <9.8 | <46 | **8.7 J** | <4 | <4 | <4 | <4 | <4 | **5.2 J** | <4 | <4 | <5.2 | **310** | <2.4 |
| | 4/22/08 | <10 | <10 | <10 | <100 | <100 | <400 | **7.9 J** | <8 | <10 | <6 | <5.0 | <20 | <10 | <10 | <5.0 | <6.4 | **160** | <4.6 |
| MW-4S | | | | | | | | | | | | | | | | | | | |
| | 5/5/03 | <0.4 | <0.4 | **1.43** | <12 | <1.2 | <9.6 | **6.17** | **4.11** | <0.4 | <0.4 | <0.4 | <0.4 | **1.41** | <0.4 | <0.4 | **4 J** | <50 | <19.6 |
| | 8/12/03 | <0.4 | <0.4 | **1.36** | <12 | <1.2 | <9.6 | **6.39** | **7.45** | <0.4 | <0.4 | <0.4 | **0.2 J** | **1.98** | <0.4 | <0.4 | <6.5 | <54.3 | <21.4 |

# Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

## Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-4S | | | | | | | | | | | | | | | | | | | |
| | 11/4/03 | <0.4 | <0.4 | **1.11** | <2 | <1.6 | **5.87 J** | **6.11** | **6.47** | <0.4 | <0.8 | <0.4 | **0.26 J** | **4.38** | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 6/15/04 | **0.68** | **0.61** | **1.4** | <3.2 | <4.8 | <9.2 | **6.2** | **6.0** | <0.32 | <0.22 | <0.26 | <0.32 | **1.7** | <0.36 | <0.8 | <2.0 | **6.4 J** | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | **0.79 J** | <3.2 | <4.8 | <9.2 | **3.0** | **0.88 J** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/24/05 | <0.32 | <0.18 | **0.83 J** | <3.2 | <4.8 | <9.2 | **3.3** | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/18/06 | <4.2 | <8.6 | <8.2 | <94 | <52 | <190 | <7.2 | <11.2 | <7.6 | <26 | <4.4 | <26 | <25 | <9.4 | <11.2 | <2.8 | <3.6 | <4.2 |
| | 10/31/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | **2.5** | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.4 | <4 | <4.8 |
| | 10/16/07 | <4 | <4 | <4 | <16.2 | <9.8 | <46 | <4 | <4 | <4 | <4 | <4 | <4 | <4 | <4 | <4 | <5.2 | <3.2 | <2.4 |
| | 4/22/08 | <10 | <10 | <10 | <100 | <100 | <400 | <10 | <8 | <10 | <6 | <5.0 | <20 | <10 | <10 | <5.0 | <6.2 | <5.4 | <4.4 |
| MW-4R | | | | | | | | | | | | | | | | | | | |
| | 4/22/08 | <5.0 | <5.0 | <5.0 | <50 | <50 | <200 | <5.0 | <4 | <5.0 | <3 | <2.5 | <10 | <5.0 | <5.0 | <2.5 | <6.4 | **3.4 J** | <4.6 |
| MW-5S | | | | | | | | | | | | | | | | | | | |
| | 5/7/03 | <0.4 | <0.4 | **0.64 J** | <12 | <1.2 | <9.6 | **1.55** | **1.86 J** | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.4 | <53.2 | <20.8 |
| | 8/14/03 | <0.4 | <0.4 | **0.47 J** | <12 | <1.2 | <9.6 | **1.28** | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.3 | **21.1 J** | <5.4 |
| | 11/6/03 | <0.4 | <0.4 | **0.38 J** | <2 | <1.6 | <1.6 | **1.01** | **4.5** | <0.4 | <0.8 | <0.4 | <0.4 | **15.4** | <0.4 | <0.4 | <5.8 | **5.1 J** | <2.2 |
| | 2/26/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | **2.1** | **3.2** | <1.0 | <2.0 | <1.0 | <5.0 | **1.2** | <1.0 | <1.0 | <5.8 | **12 J** | <2.2 |

**Table 4**
**Summary of Historical Groundwater VOCs and SVOCs Results**
**Only chemicals of concern are reported**

**Barkhamsted - New Hartford Landfill**

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-5S | | | | | | | | | | | | | | | | | | | |
| | 6/16/04 | **0.51** | <0.18 | **0.99 J** | <3.2 | <4.8 | <9.2 | **2.3** | **2.1** | <0.32 | <0.22 | <0.26 | <0.32 | **0.50** | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/2/04 | **0.56** | <0.18 | **1.3** | <3.2 | <4.8 | <9.2 | **3.2** | **3.4** | <0.32 | <0.22 | <0.26 | <0.32 | **0.64** | <0.36 | <0.8 | <2.0 | **8.9 J** | <9.2 |
| | 11/17/04 | **0.55** | <0.18 | **1.3** | <3.2 | <4.8 | <9.2 | **3.1** | **2.5** | <0.32 | <0.22 | <0.26 | <0.32 | **0.68** | <0.36 | <0.8 | <2.0 | **9.1 J** | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | **1.2** | <3.2 | <4.8 | <9.2 | **2.5** | **1.6** | <0.32 | <0.22 | <0.26 | <0.32 | **0.51** | <0.36 | <0.8 | <2.0 | **3.7 J** | <9.2 |
| | 10/26/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/19/06 | <0.166 | <0.34 | **0.85 J** | <3.8 | <2 | <7.6 | **2.0** | **1.3 J *** | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.4 | <4 | <4.8 |
| | 4/19/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.8 | <4.4 |
| | 10/17/07 | <2 | <2 | <2 | <8.2 | <5 | <24 | **3.5 J** | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <5 | **5.6 J** | <2.4 |
| | 4/23/08 | <5.0 | <5.0 | <5.0 | <50 | <50 | <200 | <5.0 | <4 | <5.0 | <3 | <2.5 | <10 | <5.0 | <5.0 | <2.5 | <6.2 | <5.4 | <4.4 |
| MW-5B | | | | | | | | | | | | | | | | | | | |
| | 5/6/03 | <0.4 | <0.4 | <9.4 | <12 | <1.2 | <9.6 | **1.1** | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **0.67 J** | <0.4 | <7 | <58.1 | <22.8 |
| | 8/14/03 | <0.4 | <0.4 | <7.2 | <12 | <1.2 | <9.6 | **1.22** | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **0.8 J** | **0.41 J** | <6 | <12.4 | <5.2 |
| | 11/6/03 | <0.4 | <0.4 | **0.2 J** | <2 | <1.6 | <1.6 | **0.69 J** | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | **0.58 J** | **0.23 J** | <5.8 | <4 | <2.2 |
| | 2/26/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | **1.0** | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **1.1** | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **0.72** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/2/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **1.0** | **0.87 J** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **0.56** | <0.8 | <2.0 | <8.2 | <9.2 |

# Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| MCLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-5B | | | | | | | | | | | | | | | | | | | |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.91** | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **0.53** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.61** | **0.65 J** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **0.62** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/26/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **1.3** | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **0.82** | <0.8 | <2 | <8.2 | <9.2 |
| | 4/19/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | **0.78 J** | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.4 | <4 | <4.8 |
| | 4/19/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | **0.81 J** | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.8 | <4.4 |
| | 10/17/07 | <2 | <2 | <2 | <8.2 | <5 | <24 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <6 | <3.6 | <2.8 |
| | 4/23/08 | <5.0 | <5.0 | <5.0 | <50 | <50 | <200 | <5.0 | <4 | <5.0 | <3 | <2.5 | <10 | <5.0 | <5.0 | <2.5 | <6.2 | <5.4 | <4.6 |
| S-3 | | | | | | | | | | | | | | | | | | | |
| | 5/2/03 | <0.4 | <0.4 | **0.96 J** | <12 | <1.2 | <9.6 | **1.57** | **1.65 J** | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <50 | <19.6 |
| | 8/12/03 | <0.4 | <0.4 | **0.97 J** | <12 | <1.2 | <9.6 | **1.66** | **2.49** | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.5 | <53.8 | <21 |
| | 8/14/03 | <0.4 | <0.8 | **0.89 J** | <8.8 | <6.8 | <10 | **1.71** | **1.2 J** | <0.4 | <0.4 | <0.8 | <0.8 | **0.24 J** | <0.4 | <0.8 | <6 | <50 | <19.6 |
| | 11/4/03 | <0.4 | <0.4 | **0.83 J** | <2 | <1.6 | <1.6 | **1.2** | **2** | <0.4 | <0.8 | <0.4 | <0.4 | **0.46 J** | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/26/04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | <5.8 | <4 | <2.2 |
| | 2/27/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | | | |
| | 6/15/04 | **0.91** | **0.54** | **2.3** | <3.2 | <4.8 | <9.2 | **3.0** | **3.2** | <0.32 | <0.22 | <0.26 | <0.32 | **0.60** | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 6/17/04 | <1.6 | <0.9 | <1.8 | <16 | <24 | <46 | <0.7 | <3.8 | <1.6 | <1.1 | <1.3 | <1.6 | <1.6 | <1.8 | <4 | <2.0 | **11** | <9.2 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| S-3 | | | | | | | | | | | | | | | | | | | |
| | 8/31/04 | **0.82** | <0.18 | **2.3** | <3.2 | <4.8 | <9.2 | **3.1** | **4.1** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/2/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/16/04 | **0.50** | <0.18 | **1.6** | <3.2 | <4.8 | <9.2 | **2.0** | **2.4** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/18/05 | <0.32 | <0.18 | **1.1** | <3.2 | <4.8 | <9.2 | **1.2** | **2.3** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/24/05 | <0.32 | <0.18 | **0.52 J** | <3.2 | <4.8 | <9.2 | **0.55** | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/18/06 | <0.166 | <0.34 | **1.6** | <3.8 | <2 | <7.6 | **1.5** | **1.8 J *** | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 10/31/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | **0.76 J** | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.4 | <4 | <4.8 |
| | 4/17/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | **0.89 J** | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.6 | <4.2 | <4.8 |
| | 10/16/07 | <2 | <2 | **2.1 J** | <8.2 | <5 | <24 | **1.7 J** | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <5 | <3 | <2.4 |
| | 4/22/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.2 | <5.4 | <4.4 |
| MW-101S | | | | | | | | | | | | | | | | | | | |
| | 5/7/03 | <40 | <40 | **11.2** | <1200 | <120 | <960 | <40 | <80 | <40 | <40 | <40 | <40 | **12000** | <40 | <40 | <6.6 | **1070** | **86.7** |
| | 8/15/03 | <40 | <40 | **9.5 J** | <1200 | <120 | <960 | <40 | <80 | <40 | <40 | <40 | <40 | **10400** | <40 | <40 | **13.1** | <53.8 | **63.1** |
| | 11/6/03 | <0.4 | **1.34** | **14.8** | **26.1** | **57.3** | **33.3** | **14** | **3.34** | <0.4 | <0.8 | <0.4 | **1.16 J** | **7260** | <0.4 | <0.4 | <5.8 | <4 | **130** |
| | 6/17/04 | <32 | <18 | <36 | <320 | <480 | <920 | <14 | <76 | <32 | <22 | <26 | <32 | **2700** | <36 | <80 | <2.0 | **710** | <9.2 |
| | 9/2/04 | <6.4 | <3.6 | **12 J** | <64 | <96 | <184 | **12** | <15.2 | <6.4 | <4.4 | <5.2 | <6.4 | **970** | <7.2 | <16 | **5.4** | **730** | <9.2 |
| | 11/18/04 | <3.2 | <1.8 | **14** | <32 | <48 | <92 | **12** | <7.6 | <3.2 | <2.2 | <2.6 | <3.2 | **440** | <3.6 | <8 | <2.0 | **580** | <9.2 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-101S | | | | | | | | | | | | | | | | | | | |
| | 4/20/05 | <6.4 | <3.6 | <7.2 | <64 | <96 | <184 | <2.8 | <15.2 | <6.4 | <4.4 | <5.2 | <6.4 | **540** | <7.2 | <16 | <4.0 | **1300** | <18.4 |
| | 10/26/05 | <1.6 | <0.9 | **2.8 J** | <16 | <24 | <46 | **5** | <3.8 | <1.6 | <1.1 | <1.3 | <1.6 | **40** | <1.8 | <4 | <2 | **19** | <9.2 |
| | 4/20/06 | <1.66 | <3.4 | **14** | <38 | <20 | <76 | **13** | <4.4 | <3 | <10 | <1.74 | <10 | **680** | <3.8 | <4.4 | <2.8 | **640** | <4.2 |
| | 11/2/06 | <10 | <10 | **13** | <100 | <100 | <130 | **9.0 J** | <10.8 | <9.4 | <12.6 | <5.0 | <9.8 | **31** | <10 | <10 | <4.8 | **830** | <4.2 |
| | 4/19/07 | <10 | <10 | <10 | <100 | <100 | <130 | **10** | <10.8 | <9.4 | <12.6 | <5.0 | <9.8 | **60** | <10 | <10 | <5 | **810 *** | <4.4 |
| | 10/18/07 | <4 | <4 | **16** | <16.2 | <9.8 | <46 | **11** | <4 | <4 | <4 | <4 | <4 | **39** | <4 | <4 | <5 | **810** | <2.4 |
| | 4/24/08 | <5.0 | <5.0 | <5.0 | <50 | <50 | <200 | **5.4** | <4 | <5.0 | <3 | <2.5 | <10 | **33** | <5.0 | <2.5 | <62 | **1000** | <44 |
| MW-101I | | | | | | | | | | | | | | | | | | | |
| | 5/8/03 | <0.4 | <0.4 | <10 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **9.2** | <62.5 | <24.4 |
| | 6/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/20/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/21/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <3 | <4 | <4.6 |
| | 4/25/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.8 | <5.8 | <4.8 |
| MW-101B | | | | | | | | | | | | | | | | | | | |
| | 5/7/03 | <0.4 | <0.4 | **0.57 J** | <12 | <1.2 | <9.6 | **0.95 J** | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | **1.87** | <0.4 | <0.4 | <6.1 | <51 | <20 |

**Table 4**
**Summary of Historical Groundwater VOCs and SVOCs Results**
**Only chemicals of concern are reported**

**Barkhamsted - New Hartford Landfill**

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| MCLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-101B | | | | | | | | | | | | | | | | | | | |
| | 8/28/03 | <0.4 | <0.4 | **0.45 J** | **27.8** | <1.2 | <9.6 | **1.34** | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | **10.7 J** | <5.2 |
| | 11/6/03 | <0.4 | <0.4 | **0.41 J** | <2 | <1.6 | <1.6 | **1.14** | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | **0.49 J** | <0.4 | <0.4 | <5.8 | **7.3 J** | <2.2 |
| | 2/27/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | **1.2** | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | **3.3 J** | <2.2 |
| | 6/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.77** | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/2/04 | <0.32 | <0.18 | **0.74 J** | <3.2 | <4.8 | <9.2 | **1.4** | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | **2.6 J** | <9.2 |
| | 11/18/04 | <0.32 | <0.18 | **0.50 J** | <3.2 | <4.8 | <9.2 | **0.83** | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/20/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.51** | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/26/05 | <3.2 | <1.8 | **15** | <32 | <48 | <92 | **13** | <7.6 | <3.2 | <2.2 | <2.6 | <3.2 | **55** | <3.6 | <8 | <2 | **1000** | <9.2 |
| | 4/20/06 | <0.166 | <0.34 | **0.69 J** | <3.8 | <2 | <7.6 | **0.97 J** | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/2/06 | <5.0 | <5.0 | <5.0 | <50 | <50 | <64 | <5.0 | <5.4 | <4.6 | <6.2 | <2.5 | <5 | <5.0 | <5.0 | <5.0 | <4.8 | <3.6 | <4.2 |
| | 4/19/07 | <5.0 | <5.0 | <5.0 | <50 | <50 | <64 | <5.0 | <5.4 | <9.4 | <6.2 | <5.0 | <9.8 | **16** | <5.0 | <5.0 | <5.2 | **74 *** | <4.6 |
| | 10/18/07 | <4 | <4 | <4 | <16.2 | <9.8 | <46 | <4 | <4 | <4 | <4 | <4 | <4 | <4 | <4 | <4 | <6 | <3.6 | <2.8 |
| | 4/24/08 | <10 | <10 | <10 | <100 | <100 | <400 | <10 | <8 | <10 | <6 | <5.0 | <20 | <10 | <10 | <5.0 | <6.2 | <5.4 | <4.4 |
| MW-101D | | | | | | | | | | | | | | | | | | | |
| | 5/8/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <50 | <19.6 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-102S | | | | | | | | | | | | | | | | | | | |
| | 5/1/03 | <0.4 | <0.4 | <9 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **11.4** | <56.2 | <22 |
| | 8/12/03 | <0.4 | <0.4 | <9 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.7 | <56.2 | <22 |
| | 11/4/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/25/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <6 | <4.2 | <2.4 |
| | 6/15/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 8/31/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <4.0 | <16.4 | <18.4 |
| | 11/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/18/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/24/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/18/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.8 | <4.4 |
| | 10/31/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.4 | <4 | <4.6 |
| | 4/17/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <4.8 | <3.6 | <4.2 |
| | 10/16/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | **31 J** | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5 | <3 | <2.4 |
| | 4/22/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.4 | <5.4 | <4.6 |
| MW-102B | | | | | | | | | | | | | | | | | | | |
| | 5/1/03 | <0.4 | <0.4 | **0.85 J** | <12 | <1.2 | <9.6 | <0.4 | **2.17** | <0.4 | <0.4 | <0.4 | **0.44 J** | **1** | **1** | **2** | <6.1 | <51 | <20 |
| | 8/12/03 | <0.4 | <0.4 | **0.73 J** | <12 | <1.2 | <9.6 | **1.19** | **2.28** | <0.4 | <0.4 | <0.4 | **0.43 J** | <0.4 | <0.4 | <0.4 | <6.6 | <54.9 | <21.6 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-102B | | | | | | | | | | | | | | | | | | | |
| | 11/4/03 | **0.61 J** | <0.4 | **0.63 J** | <2 | <1.6 | <1.6 | **1.02** | **1.72 J** | <0.4 | <0.8 | <0.4 | **0.42 J** | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/25/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | **1.0** | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/15/04 | **0.80** | <0.18 | **0.86 J** | <3.2 | <4.8 | <9.2 | **0.99** | **2.0** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 8/31/04 | <0.32 | <0.18 | **0.53 J** | <3.2 | <4.8 | <9.2 | **0.59** | **1.5** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/16/04 | **0.53** | <0.18 | **0.74 J** | <3.2 | <4.8 | <9.2 | **0.81** | **1.7** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/18/05 | **0.56** | <0.18 | **0.68 J** | <3.2 | <4.8 | <9.2 | **0.71** | **2.5** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/24/05 | <0.32 | <0.18 | **0.63 J** | <3.2 | <4.8 | <9.2 | **0.67** | **1** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/18/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.8 | <4.4 |
| | 10/31/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.6 | <4.2 | <4.8 |
| | 4/17/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <4.8 | <3.6 | <4.2 |
| | 10/16/07 | **0.25 J** | <0.4 | **0.36 J** | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.2 | <3.2 | <2.4 |
| | 4/22/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.6 | <5.6 | <4.8 |
| MW-103S | | | | | | | | | | | | | | | | | | | |
| | 5/1/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **9.7** | <50 | <19.6 |
| | 8/13/03 | <0.4 | <0.4 | <8.8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.6 | <54.9 | <21.6 |
| | 11/5/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/26/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-103S | | | | | | | | | | | | | | | | | | | |
| | 6/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 8/31/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/18/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/27/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/19/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.8 | <4.4 |
| | 10/31/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.8 | <4.4 |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.6 | <4.2 |
| | 4/19/07 | <5.0 | <5.0 | <5.0 | <50 | <50 | <64 | <5.0 | <5.4 | <4.6 | <6.2 | <2.5 | <5 | <5.0 | <5.0 | <5.0 | <5.2 | <3.8 | <4.6 |
| | 10/17/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.4 | <3.4 | <2.6 |
| | 10/18/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <3.6 | <2.8 |
| | 4/23/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.4 | <5.4 | <4.6 |
| MW-103B | | | | | | | | | | | | | | | | | | | |
| | 5/1/03 | <0.4 | <0.4 | <8.2 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **5.9 J** | <51 | <20 |
| | 8/13/03 | <0.4 | <0.4 | <8.6 | <12 | <1.2 | <9.6 | **0.25 J** | <0.8 | <0.4 | <0.4 | <0.4 | **0.62 J** | <0.4 | <0.4 | <0.4 | **16.3** | <53.8 | <21 |
| | 11/5/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | **0.22 J** | <0.4 | <0.4 | <0.8 | <0.4 | **0.6 J** | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/26/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |

# Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-103B | | | | | | | | | | | | | | | | | | | |
| | 6/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 8/31/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/18/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/27/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/19/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 10/31/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.4 | <4 | <4.6 |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | **3.7 J * B** | <4 | <4.6 |
| | 10/17/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.6 | <3.4 | <2.6 |
| | 4/23/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.2 | <5.4 | <4.6 |
| MW-104S | | | | | | | | | | | | | | | | | | | |
| | 5/5/03 | <0.4 | <0.4 | <8.2 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.1 | <51 | <20 |
| | 11/5/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 6/15/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/26/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |

# Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (μg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (μg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-104S | | | | | | | | | | | | | | | | | | | |
| | 4/19/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <4.8 | <3.6 | <4.2 |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.4 | <4 | <4.6 |
| | 10/17/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <3.6 | <2.8 |
| | 4/23/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.6 | <5.6 | <4.8 |
| MW-104I | | | | | | | | | | | | | | | | | | | |
| | 5/5/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <50 | <19.6 |
| | 6/15/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | **2.2** | <8.2 | <9.2 |
| MW-104B | | | | | | | | | | | | | | | | | | | |
| | 5/5/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **4.4 J** | <50.5 | <19.8 |
| | 11/5/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 6/15/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/26/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (μg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (μg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-104B | | | | | | | | | | | | | | | | | | | |
| | 4/19/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | **3.8 J** | <3.8 | <4.4 |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | **4.6 J** | <3.8 | <4.4 |
| | 10/17/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **13** | <3.2 | <2.4 |
| | 4/23/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.4 | <5.6 | <4.6 |
| MW-105S | | | | | | | | | | | | | | | | | | | |
| | 8/13/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <50 | <19.6 |
| MW-105B | | | | | | | | | | | | | | | | | | | |
| | 8/13/03 | <0.4 | <0.4 | <7.2 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **4.1 J** | <12.6 | <5.2 |
| MW-106S | | | | | | | | | | | | | | | | | | | |
| | 5/2/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **7.1** | <50 | <19.6 |
| | 8/12/03 | <0.4 | <0.4 | <11.2 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <8.3 | <69.4 | <27.2 |
| | 11/4/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | **0.47 J** | <0.8 | <0.4 | <0.4 | **0.82 J** | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/26/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |

**Table 4**
**Summary of Historical Groundwater VOCs and SVOCs Results**
**Only chemicals of concern are reported**

**Barkhamsted - New Hartford Landfill**

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-106S | | | | | | | | | | | | | | | | | | | |
| | 6/15/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/1/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/18/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2000 | <8200 | <9200 |
| | 10/24/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/18/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 10/31/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <4.8 | <3.6 | <4.2 |
| | 4/17/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.2 | <3.8 | <4.4 |
| | 10/16/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5 | <3 | <2.4 |
| | 4/22/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.4 | <5.4 | <4.6 |
| MW-108B | | | | | | | | | | | | | | | | | | | |
| | 8/13/03 | <0.4 | <0.4 | <8.6 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **8.6** | <53.8 | <21 |
| MW-109S | | | | | | | | | | | | | | | | | | | |
| | 8/12/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <50 | <19.6 |

**Table 4**
**Summary of Historical Groundwater VOCs and SVOCs Results**
**Only chemicals of concern are reported**

**Barkhamsted - New Hartford Landfill**

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-110I | | | | | | | | | | | | | | | | | | | |
| | 5/5/03 | <0.4 | <0.4 | **0.35 J** | <12 | <1.2 | <9.6 | **0.78 J** | **1.17 J** | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **7.3** | <50.5 | <19.8 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.53** | **0.76 J** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | **0.55 J** | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 4/24/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.2 | <5.4 | <4.6 |
| MW-111S | | | | | | | | | | | | | | | | | | | |
| | 5/7/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.1 | <50.5 | <19.8 |
| | 8/14/03 | <0.4 | <0.4 | <7.4 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.2 | <12.8 | <5.4 |
| | 11/6/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | | | |
| | 11/7/03 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | <5.8 | <4 | <2.2 |
| | 2/27/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/2/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/26/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/20/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.6 | <4.2 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-111S | | | | | | | | | | | | | | | | | | | |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.2 | <3.8 | <4.6 |
| | 10/18/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5 | <3 | <2.4 |
| | 4/24/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.4 | <5.4 | <4.6 |
| MW-111I | | | | | | | | | | | | | | | | | | | |
| | 5/7/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | **1.02** | **4.29** | <0.4 | <0.4 | <0.4 | **0.29 J** | <0.4 | **0.88 J** | <0.4 | <6 | <50 | <19.6 |
| | 8/15/03 | <0.4 | <0.4 | <7.8 | <12 | <1.2 | <9.6 | **0.87 J** | **3.57** | <0.4 | <0.4 | <0.4 | **0.29 J** | <0.4 | **0.84 J** | <0.4 | **17.2** | <13.4 | <5.6 |
| | 6/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.69** | **3.5** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **0.62** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.53** | **2.7** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **0.64** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/20/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | **2.2 *** | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 4/24/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | **1.4 J *** | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.6 | <5.8 | <4.8 |
| MW-111B | | | | | | | | | | | | | | | | | | | |
| | 5/7/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | **0.45 J** | **1.92 J** | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **0.8 J** | <0.4 | <6 | <50 | <19.6 |
| | 8/14/03 | <0.4 | <0.4 | <7.2 | <12 | <1.2 | <9.6 | **0.55 J** | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **1.12** | <0.4 | <6.1 | <12.6 | <5.2 |
| | 11/6/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | **0.29 J** | **1.57 J** | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | **0.7 J** | <0.4 | <5.8 | <4 | <2.2 |
| | 2/27/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-111B | | | | | | | | | | | | | | | | | | | |
| | 6/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/2/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | **2.1** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **1.0** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | **1.9** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **1.2** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.60** | **2.2** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **1.4** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/26/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.7** | **3.1** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **1.6** | <0.8 | <2 | <8.2 | <9.2 |
| | 4/20/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | **1.6 J *** | <0.3 | <1 | <0.174 | <1 | <1 | **0.84 J** | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | **0.88 J *** | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | **0.85 J** | <1.0 | <4.8 | <3.6 | <4.2 |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.8 | <4.4 |
| | 10/18/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **0.39 J** | <0.4 | <5 | <3 | <2.4 |
| | 4/24/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.4 | <5.4 | <4.6 |
| MW-112S | | | | | | | | | | | | | | | | | | | |
| | 5/6/03 | <0.4 | <0.4 | <8.2 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.2 | <51.5 | <20.2 |
| | 8/13/03 | <0.4 | <0.4 | <7.4 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **6.8** | <12.6 | <5.4 |
| | 11/5/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/27/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/1/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |

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## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

## Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-112S | | | | | | | | | | | | | | | | | | | |
| | 11/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/18/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/26/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/18/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.2 | <3.8 | <4.6 |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.2 | <3.8 | <4.4 |
| | 10/17/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | **0.38 J** | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.4 | <3.2 | <2.6 |
| | 4/23/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.2 | <5.4 | <4.4 |
| MW-112B | | | | | | | | | | | | | | | | | | | |
| | 5/5/03 | <0.4 | <0.4 | <8.4 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.3 | <52.6 | <20.6 |
| | 8/13/03 | <0.4 | <0.4 | <7.4 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.1 | <12.6 | <5.4 |
| | 11/5/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/27/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/1/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/18/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |

**Table 4**
**Summary of Historical Groundwater VOCs and SVOCs Results**
**Only chemicals of concern are reported**

**Barkhamsted - New Hartford Landfill**

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| MCLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-112B | | | | | | | | | | | | | | | | | | | |
| | 10/26/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/18/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.8 | <4.4 |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <4.8 | <3.6 | <4.2 |
| | 10/17/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5 | <3 | <2.4 |
| | 4/23/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.4 | <5.4 | <4.6 |
| MW-113S | | | | | | | | | | | | | | | | | | | |
| | 5/6/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.1 | <50.5 | <19.8 |
| | 8/14/03 | <0.4 | <0.4 | <7.4 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.1 | <12.6 | <5.4 |
| | 11/5/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/27/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/18/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/2/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/27/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/20/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| MCLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-113S | | | | | | | | | | | | | | | | | | | |
| | 11/2/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.2 | <3.8 | <4.4 |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.4 | <4 | <4.6 |
| | 10/18/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.4 | <3.2 | <2.6 |
| | 4/24/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.6 | <5.6 | <4.8 |
| MW-113B | | | | | | | | | | | | | | | | | | | |
| | 5/5/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <50 | <19.6 |
| | 8/28/03 | <0.4 | <0.4 | <7.2 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <12.4 | <5.2 |
| | 11/5/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | **0.78 J** | <0.4 | <0.4 | **17** | <4 | <2.2 |
| | 2/27/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/18/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | **3.3** | <8.2 | <9.2 |
| | 9/2/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | **10** | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/27/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/20/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/2/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | **4.7 J** | <3.8 | **36** |
| | 4/18/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | **5.6** | <1.0 | <1.0 | **7.5 J** | <4 | <4.6 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-113B | | | | | | | | | | | | | | | | | | | |
| | 4/24/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | **6.9 J** | <5.4 | <4.6 |
| MW-115S | | | | | | | | | | | | | | | | | | | |
| | 5/2/03 | <0.4 | <0.4 | <8.2 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **7.6** | <51 | <20 |
| | 8/12/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <50 | <19.6 |
| | 11/4/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/25/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/15/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 8/31/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/18/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/24/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/18/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 10/31/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <4.8 | <3.6 | <4.2 |
| | 4/17/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.8 | <4.4 |
| | 10/16/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5 | <3 | <2.4 |
| | 4/22/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.2 | <5.4 | <4.4 |

**Table 4**
**Summary of Historical Groundwater VOCs and SVOCs Results**
**Only chemicals of concern are reported**

**Barkhamsted - New Hartford Landfill**

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (μg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (μg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-115B | | | | | | | | | | | | | | | | | | | |
| | 5/1/03 | <0.4 | <0.4 | <8 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **6.6** | <50 | <19.6 |
| | 8/12/03 | <0.4 | <0.4 | <8.6 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.4 | <53.2 | <20.8 |
| | 11/4/03 | <0.4 | <0.4 | <0.4 | <2 | <1.6 | <1.6 | <0.4 | <0.4 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **11 J** | <4 | <2.2 |
| | 2/25/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/15/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 8/31/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/16/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | **180** |
| | 4/18/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/24/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |
| | 4/18/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 10/31/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.8 | <4.4 |
| | 4/17/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5.2 | <3.8 | <4.4 |
| | 10/16/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5 | <3 | <2.4 |
| | 4/22/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.4 | <5.6 | <4.6 |
| MW-117S | | | | | | | | | | | | | | | | | | | |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (µg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| MCLs (µg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-117S | | | | | | | | | | | | | | | | | | | |
| | 8/13/03 | <0.4 | <0.4 | <7.4 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **21.4** | <12.6 | <5.4 |
| MW-117B | | | | | | | | | | | | | | | | | | | |
| | 8/13/03 | <0.4 | <0.4 | <7.2 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **118** | <12.6 | <5.2 |
| MW-118S | | | | | | | | | | | | | | | | | | | |
| | 8/13/03 | <0.4 | <0.4 | <7.2 | <12 | <1.2 | <9.6 | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6 | <12.4 | <5.2 |
| MW-120S | | | | | | | | | | | | | | | | | | | |
| | 8/14/03 | <0.4 | <0.4 | <7.2 | <12 | <1.2 | <9.6 | **0.29 J** | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <6.1 | <12.6 | <5.2 |
| | 11/6/03 | <0.4 | <0.4 | **0.26 J** | <2 | <1.6 | <1.6 | **0.33 J** | **0.84 J** | <0.4 | <0.8 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.8 | <4 | <2.2 |
| | 2/26/04 | <1.0 | <1.0 | <1.0 | <25.0 | <10.0 | <25.0 | <1.0 | <2.0 | <1.0 | <2.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <5.8 | <4 | <2.2 |
| | 6/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/2/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | **0.78 J** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/27/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | <0.36 | <0.8 | <2 | <8.2 | <9.2 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (μg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (μg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-120S | | | | | | | | | | | | | | | | | | | |
| | 4/19/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | <0.28 | <0.44 | <0.3 | <1 | <0.174 | <1 | <1 | <0.38 | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | <1.0 | <1.0 | <5 | <3.8 | <4.4 |
| | 4/19/07 | <5.0 | <5.0 | <5.0 | <50 | <50 | <64 | <5.0 | <5.4 | <4.6 | <6.2 | <2.5 | <5 | <5.0 | <5.0 | <5.0 | <4.8 | <3.6 | <4.2 |
| | 10/17/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <5.4 | <3.4 | <2.6 |
| | 4/23/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | <1.0 | <0.50 | <6.4 | <5.4 | <4.6 |
| MW-120B | | | | | | | | | | | | | | | | | | | |
| | 8/14/03 | <0.4 | <0.4 | <7.4 | <12 | <1.2 | <9.6 | **0.78 J** | **1.27 J** | <0.4 | <0.4 | <0.4 | **0.39 J** | <0.4 | **3.35** | <0.4 | <6.2 | <12.8 | <5.4 |
| | 11/5/03 | <0.4 | <0.4 | <0.4 | **3.41 J** | <1.6 | <1.6 | **0.37 J** | **0.98 J** | <0.4 | <0.8 | <0.4 | **0.28 J** | <0.4 | **1.76** | <0.4 | <5.8 | <4 | <2.2 |
| | 6/17/04 | <0.32 | <0.18 | <0.36 | **18** | <4.8 | <9.2 | <0.14 | <0.76 | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **1.5** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 9/2/04 | <0.32 | <0.18 | <0.36 | **16** | <4.8 | <9.2 | **0.71** | **2.1** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **1.8** | <0.8 | **5.8** | <8.2 | <9.2 |
| | 11/17/04 | <0.32 | <0.18 | <0.36 | **11** | <4.8 | <9.2 | **0.59** | **1.3** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **1.7** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 4/19/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.65** | **1.2** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **2.0** | <0.8 | <2.0 | <8.2 | <9.2 |
| | 10/27/05 | <0.32 | <0.18 | <0.36 | <3.2 | <4.8 | <9.2 | **0.7** | **1.3** | <0.32 | <0.22 | <0.26 | <0.32 | <0.32 | **2** | <0.8 | <2 | <8.2 | <9.2 |
| | 4/19/06 | <0.166 | <0.34 | <0.32 | <3.8 | <2 | <7.6 | **0.55 J** | **1.0 J *** | <0.3 | <1 | <0.174 | <1 | <1 | **1.5** | <0.44 | <2.8 | <3.6 | <4.2 |
| | 11/1/06 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | **1.2** | <1.0 | <4.8 | <3.6 | <4.2 |
| | 4/19/07 | <1.0 | <1.0 | <1.0 | <10 | <10 | <13 | <1.0 | <1.08 | <0.94 | <1.26 | <0.50 | <0.98 | <1.0 | **0.67 J** | <1.0 | <5.2 | <3.8 | <4.4 |
| | 10/17/07 | <0.4 | <0.4 | <0.4 | <1.62 | <0.98 | <4.6 | **0.52 J** | **0.89 J** | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | **1.1** | <0.4 | <5.8 | <3.4 | <2.6 |

## Table 4
## Summary of Historical Groundwater VOCs and SVOCs Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | ,2-Dichloroethane | ,2-Dichloropropane | ,4-Dichlorobenzene | -Butanone | -Methyl-2-Pentanone | cetone | enzene | hloroethane | hloroform | hloromethane | ibromochloromethane | ethylene Chloride | oluene | richloroethene | inyl Chloride | is(2-Ethylhexyl)phthalate | ,4-Dimethylphenol | & 4 Dimethylphenol |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (μg/L) | | < 0.5 | < 0.5 | < 10 | < 10 | < 5 | < 10 | < 0.5 | < 1 | < 0.5 | < 1 | < 0.5 | < 2 | < 0.5 | < 0.5 | < 1 | < 2 | < 10 | < 10 |
| M CLs (μg/L) | | 5 | | 5 75 | NC | NC | NC | 5 | NC | NC | NC | NC | 5 | 1000 | 5 | | 2 | 6 NC | NC |
| MW-120B | | | | | | | | | | | | | | | | | | | |
| | 4/23/08 | <1.0 | <1.0 | <1.0 | <10 | <10 | <40 | <1.0 | <0.8 | <1.0 | <0.6 | <0.50 | <2 | <1.0 | **0.99 J** | <0.50 | <6.2 | <5.4 | <4.4 |

**Notes:**

< = Non detected values presented as two times the MDL if a paramater has an MDL value and is not an inorganic compound, otherwise value is presented as the reporting limit (RL).
Bolded value = A detected result
J = Reported result below RL, estimated value
MDL = Method detection limit
μg/L= Micrograms per liter
-- = Not analyzed

**Well Depths:**
B = Shallow bedrock
D = Deep bedrock
I = Intermediate bedrock
R = Shallow bedrock
S = Overburden well

# Table 5
# Summary of Historical Groundwater Metals Results
# Only chemicals of concern are reported

## Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-1S | | | | | |
| | 05/05/2003 | **0.012** | <0.02 | <0.005 | **0.07** |
| | 08/12/2003 | **0.014** | <0.02 | <0.005 | **0.08** |
| | 11/04/2003 | **0.024** | **0.012** | **0.041** | **0.07** |
| | 02/26/2004 | **0.011** | **0.01 J** | **0.0031 J** | **0.067** |
| | 06/16/2004 | <0.005 | **0.006** | **0.004** | **0.071** |
| | 09/01/2004 | **0.008** | <0.005 | <0.003 | **0.052** |
| | 11/16/2004 | **0.01** | <0.005 | <0.005 | **0.058** |
| | 04/18/2005 | **0.008** | <0.005 | <0.005 | **0.064** |
| | 10/24/2005 | **0.015** | **0.007** | <0.005 | **0.057** |
| | 04/18/2006 | **0.022** | **0.009** | <0.001 | **0.055** |
| | 10/31/2006 | **0.024** | **0.0091** | **0.001** | **0.075** |
| | 04/17/2007 | **0.014** | **0.0038 J** | **0.00097 J** | **0.048** |
| | 10/16/2007 | **0.011** | **0.0032 J** | <0.001 | **0.05** |
| | 04/22/2008 | **0.0077 J** | **0.0016 J** | **0.0012** | **0.054** |
| MW-4S | | | | | |
| | 05/05/2003 | **0.012** | <0.02 | <0.005 | **6.46** |
| | 08/12/2003 | **0.01** | <0.02 | <0.005 | **6.55** |
| | 11/04/2003 | **0.014** | **0.0014 J** | **0.0078 J** | **6.5** |
| | 06/15/2004 | **0.009** | **0.0015 B** | **0.003 B** | **6** |
| | 04/19/2005 | **0.01** | <0.005 | <0.005 | **1.1** |
| | 10/24/2005 | **0.012** | <0.005 | <0.005 | **0.77** |
| | 04/18/2006 | **0.0085 J** | **0.0029 J** | <0.001 | **1** |
| | 10/31/2006 | **0.0076 J** | **0.0027 J** | <0.001 | **1.2** |
| | 10/16/2007 | **0.026** | **0.0025 J** | **0.0042** | **1.3** |
| | 04/22/2008 | **0.012** | **0.0007 J** | **0.0014** | **0.96** |
| MW-4R | | | | | |
| | 04/22/2008 | **0.007 J** | **0.0011 J** | **0.0021** | **4.6** |
| MW-5S | | | | | |
| | 05/07/2003 | <0.005 | <0.02 | <0.005 | **0.85** |
| | 08/14/2003 | <0.005 | <0.02 | <0.005 | **0.83** |
| | 11/06/2003 | <0.01 | <0.01 | **0.0026 J** | **0.98** |
| | 02/26/2004 | <0.01 | <0.01 | **0.006 J** | **0.81** |
| | 06/16/2004 | <0.005 | <0.005 | <0.003 | **0.97** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | **0.79** |
| | 11/17/2004 | <0.005 | <0.005 | <0.005 | **0.7** |
| | 04/19/2005 | <0.01 | <0.005 | <0.005 | **1.2** |
| | 10/26/2005 | <0.001 | <0.005 | <0.005 | **0.73** |
| | 04/19/2006 | **0.038** | **0.0017 J** | <0.001 | **0.96** |
| | 11/01/2006 | <0.01 | **0.00067 J** | <0.001 | **0.89** |
| | 04/19/2007 | <0.01 | <0.005 | <0.001 | **0.56** |
| | 10/17/2007 | <0.01 | **0.0013 J** | **0.00046 J** | **1.8** |
| | 04/23/2008 | <0.01 | <0.005 | **0.00078 J** | **1.9** |

## Table 5
## Summary of Historical Groundwater Metals Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-5B | | | | | |
| | 05/06/2003 | <0.005 | <0.02 | <0.005 | **3.54** |
| | 08/14/2003 | <0.005 | <0.02 | <0.005 | **3.44** |
| | 11/06/2003 | <0.01 | **0.0009 J** | <0.02 | **3.2** |
| | 02/26/2004 | <0.01 | <0.01 | **0.0031 J** | **3** |
| | 06/17/2004 | <0.005 | <0.005 | <0.003 | **0.32** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | **2.9** |
| | 11/17/2004 | <0.005 | <0.005 | <0.005 | **2.7** |
| | 04/19/2005 | <0.01 | <0.005 | <0.005 | **2.8** |
| | 10/26/2005 | **0.0023** | <0.005 | <0.005 | **2.8** |
| | 04/19/2006 | **0.021** | **0.0024 J** | **0.0011** | **2.8** |
| | 11/01/2006 | <0.01 | **0.0029 J** | <0.001 | **2.6** |
| | 04/19/2007 | **0.0025 J** | **0.00074 J** | **0.001** | **2.8** |
| | 10/17/2007 | <0.01 | **0.00074 J** | **0.00051 J** | **2.7** |
| | 04/23/2008 | <0.01 | <0.005 | **0.00054 J** | **2.9** |
| S-3 | | | | | |
| | 05/02/2003 | <0.005 | <0.02 | <0.005 | **1.97** |
| | 08/12/2003 | <0.005 | <0.02 | <0.005 | **2.03** |
| | 08/14/2003 | <0.005 | <0.02 | <0.005 | **3.26** |
| | 11/04/2003 | <0.01 | **0.0006 J** | <0.02 | **1.7** |
| | 02/26/2004 | **0.0097 J** | **0.0011 J** | <0.02 | **0.64** |
| | 06/15/2004 | **0.01** | <0.005 | **0.003 B** | **3.9** |
| | 06/17/2004 | <0.005 | **0.0026 B** | **0.003 B** | **3.5** |
| | 08/31/2004 | <0.005 | <0.005 | <0.003 | **3.6** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | **1.3** |
| | 11/16/2004 | <0.005 | <0.005 | <0.005 | **2.7** |
| | 04/18/2005 | <0.005 | <0.005 | <0.005 | **1.8** |
| | 10/24/2005 | <0.005 | <0.005 | <0.005 | **0.98** |
| | 04/18/2006 | <0.01 | **0.0015 J** | <0.001 | **2.5** |
| | 10/31/2006 | <0.01 | **0.00095 J** | <0.001 | **1.5** |
| | 04/17/2007 | <0.01 | **0.00052 J** | <0.001 | **1.7** |
| | 10/16/2007 | <0.01 | <0.005 | <0.001 | **2.8** |
| | 04/22/2008 | <0.01 | <0.005 | **0.00041 J** | **1.6** |
| MW-101S | | | | | |
| | 05/07/2003 | **0.017** | <0.02 | <0.005 | **0.09** |
| | 08/15/2003 | **0.013** | <0.02 | <0.005 | **0.09** |
| | 11/06/2003 | **0.017** | **0.0036 J** | **0.0065 J** | **0.077** |
| | 06/17/2004 | **0.013** | **0.0046 B** | <0.003 | **0.096** |
| | 09/02/2004 | **0.012** | <0.005 | <0.003 | **0.073** |
| | 11/18/2004 | **0.012** | <0.005 | <0.005 | **0.073** |
| | 04/20/2005 | <0.01 | <0.005 | <0.005 | **0.081** |
| | 10/26/2005 | **0.0028** | <0.005 | <0.005 | **6.4** |
| | 04/20/2006 | **0.017** | **0.0067** | <0.001 | **0.084** |

## Table 5
## Summary of Historical Groundwater Metals Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-101S | | | | | |
| | 11/02/2006 | **0.0088 J** | **0.0044 J** | <0.001 | **0.079** |
| | 04/19/2007 | **0.008 J** | **0.0026 J** | **0.00066 J** | **0.082** |
| | 10/18/2007 | **0.0084 J** | **0.0029 J** | **0.00083 J** | **0.099** |
| | 04/24/2008 | **0.0063 J** | **0.0022 J** | **0.0011** | **0.083** |
| MW-101I | | | | | |
| | 05/08/2003 | <0.005 | <0.02 | <0.005 | **0.15** |
| | 06/17/2004 | <0.005 | <0.005 | <0.003 | **0.034** |
| | 04/20/2005 | <0.01 | <0.005 | <0.005 | **0.025** |
| | 04/21/2006 | **0.038** | **0.0012 J** | **0.0014** | **0.034** |
| | 04/25/2008 | <0.01 | **0.00094 J** | **0.0012** | **0.059** |
| MW-101B | | | | | |
| | 05/07/2003 | <0.005 | <0.02 | <0.005 | **6** |
| | 08/28/2003 | <0.005 | <0.02 | <0.005 | **5.95** |
| | 11/06/2003 | <0.01 | **0.0042 J** | **0.0057 J** | **5.1** |
| | 02/27/2004 | <0.01 | **0.002 J** | **0.011 J** | **5.2** |
| | 06/17/2004 | <0.005 | **0.0011 B** | <0.003 | **5.4** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | **5.5** |
| | 11/18/2004 | <0.005 | <0.005 | <0.005 | **5.2** |
| | 04/20/2005 | <0.01 | <0.005 | <0.005 | **4.3** |
| | 10/26/2005 | **0.012** | <0.005 | <0.005 | **0.09** |
| | 04/20/2006 | <0.01 | **0.0028 J** | <0.001 | **4.8** |
| | 11/02/2006 | <0.01 | **0.003 J** | <0.001 | **5.1** |
| | 04/19/2007 | **0.0032 J** | **0.0013 J** | **0.001** | **6.1** |
| | 10/18/2007 | <0.01 | **0.0012 J** | **0.0011** | **5.8** |
| | 04/24/2008 | <0.01 | <0.005 | **0.00092 J** | **5.3** |
| MW-101D | | | | | |
| | 05/07/2003 | -- | -- | -- | -- |
| | 05/08/2003 | <0.005 | <0.02 | **0.009** | **0.51** |
| MW-102S | | | | | |
| | 05/01/2003 | <0.005 | <0.02 | <0.005 | <0.05 |
| | 08/12/2003 | <0.005 | <0.02 | <0.005 | **0.04** |
| | 11/04/2003 | **0.014** | **0.0007 J** | <0.02 | **0.0076 J** |
| | 02/25/2004 | <0.01 | **0.0008 J** | <0.02 | **0.023** |
| | 06/15/2004 | <0.005 | <0.005 | **0.003** | **0.011** |
| | 08/31/2004 | <0.005 | <0.005 | **0.005** | **0.29** |
| | 11/16/2004 | <0.005 | <0.005 | <0.005 | <0.01 |
| | 04/18/2005 | <0.005 | <0.005 | <0.005 | <0.01 |
| | 10/24/2005 | <0.005 | <0.005 | <0.005 | **0.022** |
| | 04/18/2006 | **0.019** | **0.0015 J** | <0.001 | **0.0036 J** |
| | 10/31/2006 | <0.01 | **0.0032 J** | <0.001 | **0.055** |
| | 04/17/2007 | <0.01 | **0.00087 J** | <0.001 | **0.0053 J** |

## Table 5
## Summary of Historical Groundwater Metals Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-102S | | | | | |
| | 10/16/2007 | <0.01 | **0.0012 J** | **0.00077 J** | **0.04** |
| | 04/22/2008 | <0.01 | <0.005 | <0.001 | **0.01** |
| MW-102B | | | | | |
| | 05/01/2003 | <0.005 | <0.02 | <0.005 | **0.41** |
| | 08/12/2003 | <0.005 | <0.02 | <0.005 | **0.37** |
| | 11/04/2003 | <0.01 | **0.0009 J** | <0.02 | **0.17** |
| | 02/25/2004 | <0.01 | **0.0005 J** | **0.0028 J** | **0.23** |
| | 06/15/2004 | <0.005 | <0.005 | <0.003 | **0.4** |
| | 08/31/2004 | <0.005 | <0.005 | <0.003 | **0.17** |
| | 11/16/2004 | <0.005 | <0.005 | <0.005 | **0.37** |
| | 04/18/2005 | <0.005 | <0.005 | <0.005 | **0.3** |
| | 10/24/2005 | <0.005 | <0.005 | <0.005 | **0.26** |
| | 04/18/2006 | **0.035** | **0.0025 J** | <0.001 | **0.049** |
| | 10/31/2006 | <0.01 | **0.0034 J** | **0.0016** | **0.23** |
| | 04/17/2007 | **0.0023 J** | <0.005 | **0.0024** | **0.45** |
| | 10/16/2007 | <0.01 | <0.005 | **0.0012** | **0.34** |
| | 04/22/2008 | <0.01 | <0.005 | **0.0029** | **0.58** |
| MW-103S | | | | | |
| | 05/01/2003 | <0.005 | <0.02 | <0.005 | <0.05 |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 11/05/2003 | <0.01 | **0.0012 J** | <0.02 | **0.022** |
| | 02/26/2004 | <0.01 | **0.0011 J** | <0.02 | **0.033** |
| | 06/16/2004 | <0.005 | **0.0038 B** | <0.003 | **0.06** |
| | 08/31/2004 | <0.005 | <0.005 | <0.003 | **0.023** |
| | 11/16/2004 | <0.005 | <0.005 | <0.005 | **0.026** |
| | 04/18/2005 | <0.005 | <0.005 | <0.005 | **0.026** |
| | 10/27/2005 | <0.001 | <0.005 | <0.005 | **0.021** |
| | 04/19/2006 | <0.01 | **0.0054** | **0.0019** | **0.078** |
| | 10/31/2006 | <0.01 | **0.01** | **0.0032** | **0.2** |
| | 04/18/2007 | <0.01 | **0.0012 J** | **0.00097 J** | **0.013** |
| | 04/19/2007 | **0.003 J** | **0.00073 J** | **0.00099 J** | **3** |
| | 10/17/2007 | <0.01 | **0.0066** | **0.0028** | **0.15** |
| | 10/18/2007 | <0.01 | **0.00078 J** | <0.001 | **0.0026 J** |
| | 04/23/2008 | <0.01 | **0.0029 J** | **0.0018** | **0.06** |
| MW-103B | | | | | |
| | 05/01/2003 | <0.005 | <0.02 | <0.005 | **0.12** |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | **0.21** |
| | 11/05/2003 | <0.01 | **0.002 J** | <0.02 | **0.23** |
| | 02/26/2004 | <0.01 | **0.0005 J** | **0.0055 J** | **0.16** |
| | 06/16/2004 | <0.005 | **0.0013 B** | <0.003 | **0.23** |
| | 08/31/2004 | <0.005 | <0.005 | <0.003 | **0.063** |
| | 11/16/2004 | <0.005 | <0.005 | <0.005 | **0.027** |

## Table 5
## Summary of Historical Groundwater Metals Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-103B | | | | | |
| | 04/18/2005 | <0.005 | <0.005 | <0.005 | **0.052** |
| | 10/27/2005 | <0.001 | <0.005 | <0.005 | **0.055** |
| | 04/19/2006 | <0.01 | **0.0041 J** | **0.0026** | **0.051** |
| | 10/31/2006 | <0.01 | **0.0008 J** | <0.001 | **0.14** |
| | 04/18/2007 | <0.01 | **0.0019 J** | **0.0014** | **0.037** |
| | 10/17/2007 | <0.01 | **0.0011 J** | **0.00058 J** | **0.09** |
| | 04/23/2008 | <0.01 | **0.0015 J** | **0.00088 J** | **0.065** |
| MW-104S | | | | | |
| | 05/05/2003 | <0.005 | <0.02 | <0.005 | **0.31** |
| | 11/05/2003 | <0.01 | **0.0011 J** | <0.02 | **0.039** |
| | 06/15/2004 | <0.005 | **0.001 B** | <0.003 | **0.024** |
| | 11/17/2004 | <0.005 | <0.005 | <0.01 | **0.01** |
| | 04/19/2005 | <0.005 | <0.005 | <0.005 | **0.024** |
| | 10/26/2005 | <0.001 | <0.005 | <0.005 | **0.012** |
| | 04/19/2006 | <0.01 | **0.0019 J** | <0.002 | **0.0074 J** |
| | 11/01/2006 | <0.01 | **0.0014 J** | <0.001 | **0.039** |
| | 04/18/2007 | <0.01 | **0.0017 J** | **0.0011** | **0.085** |
| | 10/17/2007 | <0.01 | **0.0019 J** | **0.0013** | **0.19** |
| | 04/23/2008 | <0.01 | **0.0011 J** | <0.001 | **0.032** |
| MW-104I | | | | | |
| | 05/05/2003 | <0.005 | <0.02 | <0.005 | **0.08** |
| | 06/15/2004 | <0.005 | **0.0012 B** | **0.003 B** | **0.094** |
| MW-104B | | | | | |
| | 05/05/2003 | <0.005 | <0.02 | <0.005 | **0.03** |
| | 11/05/2003 | <0.01 | **0.0006 J** | <0.02 | **0.1** |
| | 06/15/2004 | <0.005 | **0.0014 B** | **0.002 B** | **0.027** |
| | 11/17/2004 | <0.005 | <0.005 | <0.01 | **0.079** |
| | 04/19/2005 | <0.005 | <0.005 | <0.005 | <0.01 |
| | 10/26/2005 | <0.001 | <0.005 | <0.005 | <0.01 |
| | 04/19/2006 | <0.01 | **0.0014 J** | <0.002 | **0.011** |
| | 11/01/2006 | <0.01 | **0.0034 J** | **0.0063** | **0.079** |
| | 04/18/2007 | <0.01 | **0.0036 J** | **0.0042** | **0.056** |
| | 10/17/2007 | <0.01 | **0.0013 J** | **0.0031** | **0.069** |
| | 04/23/2008 | <0.01 | **0.00075 J** | **0.001** | **0.025** |
| MW-105S | | | | | |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | **0.04** |
| MW-105B | | | | | |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | **0.02** |
| MW-106S | | | | | |
| | 05/02/2003 | <0.005 | <0.02 | <0.005 | **0.39** |

**Table 5**
**Summary of Historical Groundwater Metals Results**
**Only chemicals of concern are reported**

**Barkhamsted - New Hartford Landfill**

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-106S | | | | | |
| | 08/12/2003 | <0.005 | <0.02 | <0.005 | **0.51** |
| | 11/04/2003 | <0.01 | **0.0015 J** | <0.02 | **0.34** |
| | 02/26/2004 | <0.01 | **0.0007 J** | <0.02 | **0.29** |
| | 06/15/2004 | <0.005 | **0.0029 B** | **0.002 B** | **0.35** |
| | 09/01/2004 | <0.005 | <0.005 | <0.003 | **0.34** |
| | 11/16/2004 | <0.005 | <0.005 | <0.005 | **0.28** |
| | 04/18/2005 | <0.005 | <0.005 | <0.005 | **0.23** |
| | 10/24/2005 | <0.005 | <0.005 | <0.005 | **0.27** |
| | 04/18/2006 | **0.0046 J** | **0.0017 J** | <0.001 | **0.17** |
| | 10/31/2006 | <0.01 | **0.001 J** | <0.001 | **0.2** |
| | 04/17/2007 | <0.01 | **0.00069 J** | <0.001 | **0.034** |
| | 10/16/2007 | <0.01 | <0.005 | <0.001 | **0.31** |
| | 04/22/2008 | <0.01 | **0.0012 J** | **0.00091 J** | **0.15** |
| MW-108B | | | | | |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | **0.04** |
| MW-109S | | | | | |
| | 08/12/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| MW-110I | | | | | |
| | 05/05/2003 | <0.005 | <0.02 | <0.005 | **4.8** |
| | 04/19/2005 | <0.005 | <0.005 | **0.012** | **4.4** |
| | 04/19/2006 | **0.033** | **0.003 J** | **0.015** | **5.1** |
| | 04/24/2008 | <0.01 | <0.005 | **0.0012** | **5** |
| MW-111S | | | | | |
| | 05/07/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 08/14/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 11/06/2003 | <0.01 | **0.0009 J** | <0.02 | **0.018** |
| | 02/27/2004 | <0.01 | <0.01 | **0.002 J** | **0.015** |
| | 06/16/2004 | <0.005 | **0.0014 B** | <0.003 | **0.032** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | **0.023** |
| | 11/17/2004 | <0.005 | <0.005 | <0.005 | **0.027** |
| | 04/19/2005 | <0.005 | <0.005 | <0.005 | <0.01 |
| | 10/26/2005 | <0.001 | <0.005 | <0.005 | **0.016** |
| | 04/20/2006 | **0.04** | **0.0015 J** | <0.001 | **0.017** |
| | 11/01/2006 | <0.01 | **0.00076 J** | <0.001 | **0.026** |
| | 04/18/2007 | <0.01 | **0.00091 J** | **0.00075 J** | **0.019** |
| | 10/18/2007 | <0.01 | **0.00081 J** | <0.001 | **0.0032 J** |
| | 04/24/2008 | <0.01 | **0.00071 J** | **0.00062 J** | **0.0092 J** |
| MW-111I | | | | | |
| | 05/07/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 08/15/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 06/16/2004 | <0.005 | <0.005 | <0.003 | **0.0041 B** |

# Table 5
## Summary of Historical Groundwater Metals Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-111I | | | | | |
| | 04/19/2005 | <0.005 | <0.005 | <0.005 | <0.01 |
| | 04/20/2006 | **0.017** | **0.0014 J** | <0.001 | **0.0055 J** |
| | 04/24/2008 | <0.01 | **0.00076 J** | **0.00095 J** | **0.018** |
| MW-111B | | | | | |
| | 05/07/2003 | <0.005 | <0.02 | <0.005 | **0.03** |
| | 08/14/2003 | <0.005 | <0.02 | <0.005 | **0.04** |
| | 11/06/2003 | <0.01 | **0.0006 J** | <0.02 | **0.03** |
| | 02/27/2004 | <0.01 | **0.0006 J** | <0.02 | **0.045** |
| | 06/16/2004 | <0.005 | **0.003 B** | **0.004** | **0.048** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | **0.065** |
| | 11/17/2004 | <0.005 | <0.005 | <0.005 | **0.077** |
| | 04/19/2005 | <0.005 | <0.005 | <0.005 | **0.044** |
| | 10/26/2005 | **0.0013** | <0.005 | <0.005 | **0.025** |
| | 04/20/2006 | <0.01 | **0.0014 J** | <0.001 | **0.023** |
| | 11/01/2006 | <0.01 | **0.003 J** | **0.0013** | **0.02** |
| | 04/18/2007 | <0.01 | **0.00079 J** | <0.001 | **0.015** |
| | 10/18/2007 | <0.01 | **0.0011 J** | **0.0007 J** | **0.014** |
| | 04/24/2008 | <0.01 | <0.005 | **0.00087 J** | **0.019** |
| MW-112S | | | | | |
| | 05/06/2003 | <0.005 | <0.02 | <0.005 | **0.06** |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | **0.02** |
| | 11/05/2003 | <0.01 | <0.01 | <0.02 | **0.01 J** |
| | 02/27/2004 | <0.01 | **0.0077 J** | <0.02 | **0.032** |
| | 06/16/2004 | <0.005 | **0.0052** | <0.003 | **0.039** |
| | 09/01/2004 | <0.005 | **0.0079** | **0.004** | **0.1** |
| | 11/16/2004 | <0.005 | <0.005 | <0.01 | **0.019** |
| | 04/18/2005 | <0.005 | <0.005 | <0.005 | <0.01 |
| | 10/26/2005 | <0.001 | <0.005 | <0.005 | <0.01 |
| | 04/18/2006 | **0.004 J** | **0.0025 J** | <0.002 | **0.0075 J** |
| | 11/01/2006 | <0.01 | **0.019** | **0.0019** | **0.19** |
| | 04/18/2007 | <0.01 | **0.0023 J** | <0.001 | **0.0096 J** |
| | 10/17/2007 | <0.01 | **0.002 J** | **0.00038 J** | **0.0097 J** |
| | 04/23/2008 | <0.01 | **0.0032 J** | **0.00085 J** | **0.018** |
| MW-112B | | | | | |
| | 05/05/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 11/05/2003 | <0.01 | **0.0045 J** | <0.02 | **0.0037 J** |
| | 02/27/2004 | <0.01 | **0.0066 J** | <0.02 | **0.022** |
| | 06/16/2004 | <0.005 | **0.0049 B** | <0.003 | **0.0062 B** |
| | 09/01/2004 | <0.005 | <0.005 | <0.003 | <0.01 |
| | 11/17/2004 | <0.005 | <0.005 | <0.01 | <0.01 |
| | 04/18/2005 | <0.005 | **0.0062** | <0.005 | <0.01 |

## Table 5
## Summary of Historical Groundwater Metals Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-112B | | | | | |
| | 10/26/2005 | <0.001 | <0.005 | <0.005 | <0.01 |
| | 04/18/2006 | **0.0051 J** | **0.0042 J** | <0.002 | **0.0035 J** |
| | 11/01/2006 | <0.01 | **0.005 J** | <0.001 | **0.0051 J** |
| | 04/18/2007 | <0.01 | **0.0041 J** | **0.00074 J** | **0.006 J** |
| | 10/17/2007 | <0.01 | **0.0041 J** | <0.001 | **0.0049 J** |
| | 04/23/2008 | <0.01 | **0.004 J** | <0.001 | **0.0033 J** |
| MW-113S | | | | | |
| | 05/06/2003 | <0.005 | <0.02 | **0.005** | **0.02** |
| | 08/14/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 11/05/2003 | <0.01 | **0.0016 J** | <0.02 | **0.0024 J** |
| | 02/27/2004 | <0.01 | **0.001 J** | <0.02 | **0.0048 J** |
| | 06/18/2004 | <0.005 | **0.0011 B** | <0.003 | **0.0014 B** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | <0.01 |
| | 11/17/2004 | <0.005 | <0.005 | <0.01 | <0.01 |
| | 04/19/2005 | <0.005 | <0.005 | <0.005 | <0.01 |
| | 10/27/2005 | <0.001 | <0.005 | <0.005 | <0.01 |
| | 04/20/2006 | <0.01 | **0.0015 J** | <0.001 | **0.0039 J** |
| | 11/02/2006 | <0.01 | **0.0012 J** | <0.001 | **0.0013 J** |
| | 04/18/2007 | <0.01 | **0.00089 J** | **0.00089 J** | **0.0011 J** |
| | 10/18/2007 | <0.01 | **0.00093 J** | **0.00053 J** | **0.0016 J** |
| | 04/24/2008 | <0.01 | **0.00093 J** | **0.00066 J** | **0.0032 J** |
| MW-113B | | | | | |
| | 05/05/2003 | <0.005 | <0.02 | <0.005 | **0.04** |
| | 08/28/2003 | <0.005 | <0.02 | <0.005 | **0.03** |
| | 11/05/2003 | <0.01 | **0.0016 J** | <0.02 | **0.019** |
| | 02/27/2004 | <0.01 | **0.001 J** | **0.0024 J** | **0.0085 J** |
| | 06/18/2004 | <0.005 | <0.005 | <0.003 | **0.011** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | <0.01 |
| | 11/17/2004 | <0.005 | <0.005 | <0.01 | <0.01 |
| | 04/19/2005 | <0.005 | <0.005 | <0.005 | <0.01 |
| | 10/27/2005 | <0.001 | <0.005 | <0.005 | **0.02** |
| | 04/20/2006 | **0.0056 J** | **0.0046 J** | **0.0026** | **0.024** |
| | 11/02/2006 | <0.01 | **0.0033 J** | <0.001 | **0.0058 J** |
| | 04/18/2007 | <0.01 | **0.0014 J** | **0.0013** | **0.0062 J** |
| | 04/24/2008 | <0.01 | **0.0018 J** | **0.0016** | **0.0095 J** |
| MW-115S | | | | | |
| | 05/02/2003 | <0.005 | <0.02 | <0.005 | <0.05 |
| | 08/12/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 11/04/2003 | **0.0059 J** | **0.0009 J** | <0.02 | **0.0044 J** |
| | 02/25/2004 | <0.01 | **0.0006 J** | <0.02 | **0.007 J** |
| | 06/15/2004 | <0.005 | **0.0021 B** | **0.003** | **0.029** |
| | 08/31/2004 | <0.005 | <0.005 | <0.003 | <0.01 |

## Table 5
## Summary of Historical Groundwater Metals Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-115S | | | | | |
| | 11/16/2004 | <0.005 | <0.005 | <0.005 | **0.016** |
| | 04/18/2005 | <0.005 | <0.005 | <0.005 | **0.013** |
| | 10/24/2005 | <0.005 | <0.005 | <0.005 | **0.027** |
| | 04/18/2006 | **0.024** | **0.0021 J** | <0.001 | **0.022** |
| | 10/31/2006 | <0.01 | **0.0027 J** | <0.001 | **0.012** |
| | 04/17/2007 | <0.01 | **0.0015 J** | **0.0012** | **0.021** |
| | 10/16/2007 | <0.01 | **0.0018 J** | **0.00099 J** | **0.039** |
| | 04/22/2008 | <0.01 | **0.0012 J** | **0.00095 J** | **0.014** |
| MW-115B | | | | | |
| | 05/01/2003 | <0.005 | <0.02 | <0.005 | **0.07** |
| | 08/12/2003 | <0.005 | <0.02 | <0.005 | **0.13** |
| | 11/04/2003 | **0.01** | **0.0018 J** | <0.02 | **0.066** |
| | 02/25/2004 | **0.012** | **0.0021 J** | **0.0026 J** | **0.075** |
| | 06/15/2004 | <0.005 | **0.0011 B** | **0.005** | **0.048** |
| | 08/31/2004 | <0.005 | <0.005 | <0.003 | **0.035** |
| | 11/16/2004 | <0.005 | <0.005 | <0.005 | **0.13** |
| | 04/18/2005 | <0.005 | <0.005 | <0.005 | **0.13** |
| | 10/24/2005 | <0.005 | <0.005 | <0.005 | **0.12** |
| | 04/18/2006 | **0.011** | **0.0011 J** | <0.002 | **0.085** |
| | 10/31/2006 | <0.01 | **0.003 J** | <0.001 | **0.026** |
| | 04/17/2007 | <0.01 | **0.0011 J** | **0.0011** | **0.021** |
| | 10/16/2007 | <0.01 | **0.0011 J** | **0.00099 J** | **0.011** |
| | 04/22/2008 | <0.01 | **0.0011 J** | **0.0012** | **0.01** |
| MW-117S | | | | | |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | **0.74** |
| MW-117B | | | | | |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| MW-118S | | | | | |
| | 08/13/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| MW-120S | | | | | |
| | 08/14/2003 | <0.005 | <0.02 | <0.005 | **3.15** |
| | 11/06/2003 | <0.01 | **0.0011 J** | **0.0032 J** | **3.3** |
| | 02/26/2004 | <0.01 | **0.0006 J** | **0.002 J** | **2.2** |
| | 06/17/2004 | <0.005 | **0.0018 B** | **0.003 B** | **2.9** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | **1.5** |
| | 11/17/2004 | <0.005 | <0.005 | <0.005 | **2.6** |
| | 04/19/2005 | <0.01 | <0.005 | <0.005 | **2.9** |
| | 10/27/2005 | <0.001 | <0.005 | <0.005 | **1.6** |
| | 04/19/2006 | **0.0056 J** | **0.0028 J** | <0.001 | **2.4** |
| | 11/01/2006 | <0.01 | **0.0028 J** | <0.001 | **1.6** |
| | 04/19/2007 | <0.01 | **0.00083 J** | <0.001 | **2.4** |

## Table 5
## Summary of Historical Groundwater Metals Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Chromium | Lead | Manganese |
|---|---|---|---|---|---|
| ROD Cleanup (mg/L) | | 0.005 | 0.050 | 0.003 | 0.050 |
| MCLs (mg/L) | | 0.010 | 0.1 | 0.015 | NC |
| MW-120S | | | | | |
| | 10/17/2007 | <0.01 | **0.00073 J** | **0.00051 J** | **0.81** |
| | 04/23/2008 | <0.01 | <0.005 | **0.00077 J** | **2.4** |
| MW-120B | | | | | |
| | 08/14/2003 | <0.005 | <0.02 | <0.005 | <0.02 |
| | 11/05/2003 | **0.0062 J** | **0.0016 J** | <0.02 | **0.061** |
| | 06/17/2004 | <0.005 | <0.005 | **0.002 B** | **0.39** |
| | 09/02/2004 | <0.005 | <0.005 | <0.003 | **0.46** |
| | 11/17/2004 | <0.005 | <0.005 | <0.01 | **0.47** |
| | 04/19/2005 | <0.01 | <0.005 | <0.005 | **0.47** |
| | 10/27/2005 | **0.0019** | <0.005 | <0.005 | **0.4** |
| | 04/19/2006 | **0.011** | **0.003 J** | <0.001 | **0.41** |
| | 11/01/2006 | <0.01 | **0.0021 J** | <0.001 | **0.33** |
| | 04/19/2007 | <0.01 | **0.00055 J** | **0.00046 J** | **0.34** |
| | 10/17/2007 | <0.01 | <0.005 | <0.001 | **0.32** |
| | 04/23/2008 | <0.01 | **0.0012 J** | **0.00099 J** | **0.33** |

**Notes:**

< = Non detected values presented as two times the MDL if a paramater has an MDL value and is not an inorganic compound, otherwise value is presented as the reporting limit (RL).
Bolded value = A detected result
J = Reported result below RL, estimated value
MDL = Method detection limit
M = MS/MSD anomaly
S = Sample receiving anomaly
mg/L= Milligrams per liter
-- = Not Analyzed
NC = No Criteria Limit Available

**Well Depths:**
B = Shallow bedrock
D = Deep bedrock
I = Intermediate bedrock
R = Shallow bedrock
S = Overburden well

**Table 6**
**Summary of Historical Seeps and Surface Water Metals Results**
**Only chemicals of concern are reported**

**Barkhamsted - New Hartford Landfill**

| Well Location | Sample Date | Arsenic | Aluminum | Barium | Cadmium | Chromium | Copper | Iron | Lead | Manganese | Zinc |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benchmark Criteria (mg/L) | | | | | | | | | | | |
| Surface Water | | NC | 0.087 | 0.0039 | NC | NC | 0.0027 | 1.0 | 0.0004 | 0.12 | 0.0365 |
| Seeps | | 0.15 | 0.087 | 0.0039 | 0.0008 | 0.0238 | 0.029 | 1.0 | 0.0147 | 0.12 | 0.382 |
| S3 | | | | | | | | | | | |
| | 11/07/2003 | <0.01 | **0.029 J** | **0.17** | <0.005 | **0.0008 J** | <0.02 | **41 M** | **0.0063 J** | **2.6** | **0.0044 J** |
| | 11/18/2004 | <0.005 | <0.1 | **0.012** | <0.001 | <0.005 | <0.01 | **1.1** | <0.005 | **0.18** | <0.04 |
| | 04/20/2005 | <0.005 | **0.065** | **0.011** | <0.001 | <0.005 | <0.01 | **0.84** | <0.005 | **0.14** | <0.04 |
| | 10/24/2005 | <0.005 | <0.05 | <0.01 | <0.001 | <0.005 | <0.01 | **0.31** | <0.005 | **0.061** | <0.04 |
| | 04/18/2006 | <0.01 | **0.2** | **0.21** | <0.001 | **0.0026 J** | **0.0038 J** | **50** | <0.001 | **2.3** | **0.0023 J** |
| | 11/01/2006 | <0.01 | **3.5** | **0.095** | **0.00024 J** | **0.012** | **0.03** | **12** | **0.014** | **0.73** | **0.056** |
| | 04/25/2008 | **0.015** | **5.5** | **0.71** | **0.0067** | **0.021** | **0.03** | **420** | **0.013** | **2.5** | **0.048 J** |
| S6 | | | | | | | | | | | |
| | 08/14/2003 | <0.005 | **0.11** | **0.31** | <0.001 | <0.02 | <0.02 | **138** | <0.005 | **6.73** | <0.05 |
| | 11/07/2003 | **0.0095 J** | **0.9** | **0.19** | **0.0005 J** | **0.0028 J** | **0.0038 J** | **77 M** | **0.015 J** | **5.5** | **0.3** |
| | 06/17/2004 | <0.005 | **0.11** | **0.14** | <0.001 | **0.0022 B** | <0.01 | **24** | <0.003 | **8.8** | **0.007 B** |
| | 04/20/2005 | <0.005 | **0.13** | **0.013** | <0.001 | <0.005 | <0.01 | **1.4** | <0.005 | **0.2** | <0.04 |
| | 10/24/2005 | <0.02 | **13** | **1.1** | **0.0052** | **0.036** | **0.08** | **560** | **0.041** | **16** | <0.2 |
| | 04/20/2007 | <0.2 | **98** | **3.5** | **0.031** | **0.24** | **0.54** | **1900** | **0.18** | **44** | **1.1** |
| | 04/25/2008 | <0.01 | **2.6** | **0.29** | **0.0016** | **0.0063** | **0.026** | **85** | **0.0078** | **17** | **0.034 J** |
| SW-3 | | | | | | | | | | | |
| | 08/15/2003 | <0.005 | -- | <0.05 | <0.001 | <0.02 | <0.02 | **0.16** | <0.005 | **0.03** | <0.05 |
| | 11/07/2003 | **0.012** | **0.11** | **0.0072 J** | <0.005 | **0.0006 J** | <0.02 | **0.075 M** | <0.02 | **0.017** | **0.0094 J** |
| | 06/17/2004 | <0.005 | **0.058** | **0.007 B** | **0.0005 B** | <0.005 | <0.01 | **0.1** | **0.003** | **0.14** | **0.005 B** |
| | 09/01/2004 | <0.005 | **0.74** | **0.015** | <0.001 | <0.005 | **0.017** | **1.6** | **0.003** | **1.2** | <0.04 |
| | 11/18/2004 | <0.005 | <0.1 | <0.01 | <0.001 | <0.005 | <0.01 | **0.1** | <0.005 | **0.045** | <0.04 |
| | 04/20/2005 | <0.01 | **0.39** | <0.01 | <0.001 | <0.005 | <0.01 | **0.38** | <0.005 | **0.084** | <0.04 |
| | 10/24/2005 | <0.005 | **0.1** | <0.01 | <0.001 | <0.005 | <0.01 | **0.05** | <0.005 | <0.01 | <0.04 |
| | 04/18/2006 | <0.01 | **0.068 J** | **0.0081 J** | <0.001 | **0.00084 J** | **0.0034 J** | **0.035 J** | <0.001 | **0.0079 J** | **0.0068 J** |
| | 11/01/2006 | <0.01 | **0.086 J** | **0.0064 J** | <0.001 | **0.00065 J** | **0.0031 J** | **0.033 J** | <0.001 | **0.0044 J** | <0.05 |
| | 04/20/2007 | <0.01 | **0.11** | **0.005 J** | <0.001 | **0.00075 J** | **0.0041 J** | **0.023 J** | <0.001 | **0.0026 J** | **0.0071 J** |
| | 04/25/2008 | <0.01 | **0.11** | **0.0062 J** | <0.001 | <0.005 | **0.0005 J** | **0.11** | **0.00063 J** | **0.0093 J** | **0.0048 J** |
| SW-9 | | | | | | | | | | | |
| | 08/14/2003 | <0.005 | **0.52** | <0.05 | <0.001 | <0.02 | <0.02 | **5.3** | <0.005 | **0.42** | <0.05 |
| | 11/07/2003 | <0.01 | **0.089 J** | **0.0098 J** | <0.005 | <0.01 | **0.0011 J** | **0.61 M** | <0.02 | **0.099** | **0.01 J** |
| | 02/25/2004 | <0.01 | **0.12** | **0.013 J** | <0.005 | **0.0039 J** | **0.011 J** | **1.2** | <0.02 | **0.23** | **0.048** |
| | 06/17/2004 | <0.005 | <0.05 | **0.036** | <0.001 | <0.005 | **0.001 B** | **4** | **0.003** | **0.75** | **0.006 B** |
| | 09/01/2004 | <0.005 | <0.05 | **0.047** | <0.001 | <0.005 | <0.01 | **4.8** | <0.003 | **0.87** | <0.04 |
| | 11/18/2004 | <0.005 | <0.1 | **0.013** | <0.001 | <0.005 | <0.01 | **1.3** | <0.005 | **0.21** | <0.04 |
| | 04/20/2005 | <0.01 | **0.059** | <0.01 | <0.001 | <0.005 | <0.01 | **0.83** | <0.005 | **0.15** | <0.04 |

## Table 6
## Summary of Historical Seeps and Surface Water Metals Results
## Only chemicals of concern are reported

### Barkhamsted - New Hartford Landfill

| Well Location | Sample Date | Arsenic | Aluminum | Barium | Cadmium | Chromium | Copper | Iron | Lead | Manganese | Zinc |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benchmark Criteria (mg/L) | | | | | | | | | | | |
| Surface Water | | NC | 0.087 | 0.0039 | NC | NC | 0.0027 | 1.0 | 0.0004 | 0.12 | 0.0365 |
| Seeps | | 0.15 | 0.087 | 0.0039 | 0.0008 | 0.0238 | 0.029 | 1.0 | 0.0147 | 0.12 | 0.382 |
| SW-9 | | | | | | | | | | | |
| | 10/24/2005 | <0.005 | **0.075** | <0.01 | <0.001 | <0.005 | <0.01 | **0.38** | <0.005 | **0.077** | <0.04 |
| | 04/18/2006 | **0.021** | **0.033 J** | **0.013** | <0.001 | **0.00074 J** | **0.014** | **1** | <0.001 | **0.23** | **0.0048 J** |
| | 11/01/2006 | <0.01 | **0.041 J** | **0.012** | <0.001 | **0.0022 J** | **0.013** | **0.67** | <0.001 | **0.12** | **0.0072 J** |
| | 04/20/2007 | <0.01 | **0.13** | **0.0085 J** | **0.00013 J** | **0.0011 J** | **0.013** | **0.36** | <0.001 | **0.05** | **0.012 J** |
| | 04/25/2008 | <0.01 | **0.023 J** | **0.013** | <0.001 | <0.005 | **0.00058 J** | **0.67** | <0.001 | **0.12** | **0.0046 J** |
| SW-16 | | | | | | | | | | | |
| | 08/14/2003 | <0.005 | <0.1 | <0.05 | <0.001 | <0.02 | <0.02 | **0.68** | <0.005 | **0.2** | <0.05 |
| | 11/07/2003 | <0.01 | **0.085 J** | **0.008 J** | <0.005 | **0.0007 J** | **0.0015 J** | **0.28 M** | <0.02 | **0.058** | **0.01 J** |
| | 02/25/2004 | <0.01 | **0.092 J** | **0.012 J** | <0.005 | **0.0007 J** | **0.001 J** | **0.54** | **0.0028 J** | **0.15** | **0.014 J** |
| | 06/17/2004 | <0.005 | <0.05 | **0.013** | **0.0012** | <0.005 | **0.001 B** | **0.97** | **0.008** | **0.33** | **0.004 B** |
| | 09/01/2004 | <0.005 | **0.063** | **0.013** | <0.001 | <0.005 | <0.01 | **1.6** | <0.003 | **0.42** | <0.04 |
| | 11/18/2004 | <0.005 | <0.1 | <0.01 | <0.001 | <0.005 | <0.01 | **0.92** | <0.005 | **0.2** | <0.04 |
| | 04/20/2005 | <0.01 | **0.33** | <0.01 | <0.001 | <0.005 | <0.01 | **1.4** | <0.005 | **0.15** | <0.04 |
| | 10/24/2005 | <0.005 | **0.091** | <0.01 | <0.001 | <0.005 | <0.01 | **0.22** | <0.005 | **0.042** | <0.04 |
| | 04/18/2006 | **0.011** | **0.04 J** | **0.0072 J** | <0.001 | **0.001 J** | **0.0014 J** | **0.63** | <0.001 | **0.16** | **0.0057 J** |
| | 11/01/2006 | <0.01 | **0.075 J** | **0.0076 J** | <0.001 | **0.0008 J** | **0.0023 J** | **0.48** | <0.001 | **0.11** | <0.05 |
| | 04/20/2007 | <0.01 | **0.13** | **0.0085 J** | **0.00013 J** | **0.0011 J** | **0.013** | **0.36** | <0.001 | **0.05** | **0.012 J** |
| | 04/25/2008 | <0.01 | **0.042 J** | **0.0064 J** | <0.001 | <0.005 | **0.00063 J** | **0.39** | <0.001 | **0.12** | <0.05 |

**Notes:**

< = Non detected values presented as two times the MDL if a paramater has an MDL value and is not an inorganic compound, otherwise value is presented as the reporting limit (RL).
Bolded value = A detected result
J = Reported result below RL, estimated value
MDL = Method detection limit
M = MS/MSD anomaly
S = Sample receiving anomaly
mg/L= Milligrams per liter
-- = Not Analyzed
NC = No Criteria Limit Available

S3 and S6 = Seeps
SW-3, SW-9, SW-16 = Surface Water Samples

**Table 7**
**Summary of Historical Sediment Metals Results**
**Barkhamsted - New Hartford Landfill**
*Concentrations in milligrams per kilogram (mg/kg)*

| Location | Sample Date | Barium | Chromium | Copper | Iron | Lead | Manganese | Nickle | Zinc |
|---|---|---|---|---|---|---|---|---|---|
| Sediment Benchmark Concentrations (mg/kg) | TEC | 40 | 43.4 | 31.6 | 20000 | 35.8 | 460 | 22.8 | 121 |
| | PEC | 40 | 111 | 149 | 40000 | 128 | 1100 | 48.6 | 459 |
| **Sed-3** | | | | | | | | | |
| (upstream) | 6/17/2004 | **160** | 39 | 18 | 33000 | 55 | **3400** | 25 | 140 |
| | 4/20/2005 | **130** | 33 | < 14 | 32000 | 62 | **4000** | 22 | 130 |
| | 4/18/2006 | **180** | **57** | 17 | 37000 | 56 | **4100** | 31 | 150 |
| | 4/20/2007 | **130** | 35 | 17 | 27000 | 31 | **4100** | 23 | 88 |
| | 4/25/2008 | **120** | 31 | 17 | 32000 | 50 | **3400** | 22 | 110 |
| **Sed-16** | | | | | | | | | |
| (mid-stream) | 6/17/2004 | **53** | 10 | 7.6 | 16000 | 6.4 | 730 | 7.9 | 34 |
| | 4/20/2005 | 37 | 6.9 | 6.6 | 10000 | 6 | 600 | 5.6 | 25 |
| | 4/18/2006 | **43** | **340** | 51 | 11000 | 9 | 200 | 85 | 33 |
| | 4/20/2007 | 32 | 10 | 5.9 | 15000 | 1.9 | 190 | 5.5 | 19 |
| Dup | 4/20/2007 | **48** | 15 | 9.4 | 9300 | 11 | 690 | 7.2 | 35 |
| | 4/25/2008 | 38 | 8.4 | 14 | 10000 | 1.6 | 320 | 6.5 | 24 |
| **Sed-9** | | | | | | | | | |
| (downstream | 6/17/2004 | 34 | 25 | 17 | 19000 | 22 | 300 | 9.1 | 31 |
| | 4/20/2005 | 37 | 10 | 12 | 14000 | 4.4 | 400 | 6.7 | 29 |
| | 4/18/2006 | 28 | 11 | 5.1 | 10000 | 4.8 | 360 | 5.5 | 26 |
| | 4/20/2007 | **42** | 18 | 7.7 | 13000 | 6.1 | 400 | 6.9 | 31 |
| | 4/25/2008 | 28 | 8.1 | 4.3 | 10000 | 2.9 | 260 | 4.5 | 23 |

**Notes:**

Bold value indicates concentration above benchmark concentration as presented in the ROD.

Table 8
Summary of Chemicals of Concern Analtyical Results - 2003 to 2008
VOCs and SVOCs in Groundwater

Barkhamsted - New Hartford Landfill

| VOC of Concern | 1,2-Dichloropropane | | | 4-Methyl-2-pentanone | | | Acetone | | | Chloroform | | | Chloromethane | | | 2-Butanone | | | 1,2-Dichloroethane | | | 1,4-Dichlorobenzene | | | Benzene | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (ug/L) | 0.5 | | | 5 | | | 10 | | | 0.5 | | | 1 | | | 10 | | | 0.5 | | | 10 | | | 0.5 | | |
| MCL (ug/L) | 5 | | | NC | | | 700 | | | NC | | | 2.7 | | | NC | | | 1 | | | 75 | | | 5 | | |
| Well ID | Min | Max | %Detect | Min | Max | %Detect | Min | Max | %Detect | Min | Max | %Detect | Min | Max | %Detect | Min | Max | %Detect | Min | Max | %Detect | Min | Max | %Detect | Min | Max | %Detect |
| MW-1S | 0.64 | 0.64 | 7 | 0.88 | 0.88 | 7 | 11 | 11 | 7 | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.53 | 0.67 | 13 | 3.8 | 6.1 | 61 | 7.9 | 13.7 | 93 |
| MW-4S | 0.61 | 0.61 | 10 | ND | ND | --- | 5.87 | 5.87 | 10 | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.68 | 0.68 | 10 | 0.79 | 1.43 | 50 | 2.5 | 6.39 | 70 |
| MW-4R | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-5S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.51 | 0.56 | 19 | 0.38 | 1.3 | 47 | 1.01 | 3.5 | 69 |
| MW-5B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.2 | 0.2 | 6 | 0.61 | 1.3 | 79 |
| MW-101S | 1.34 | 1.34 | 8 | 57.3 | 57.3 | 8 | 33.3 | 33.3 | 8 | ND | ND | --- | ND | ND | --- | 26.1 | 26.1 | 8 | ND | ND | --- | 2.8 | 16 | 60 | 5 | 14 | 69 |
| MW-101B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 3.7 | 27.8 | 8 | ND | ND | --- | 0.41 | 15 | 29 | 0.37 | 13 | 56 |
| MW-101I | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-101D | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-102S | ND | ND | --- | ND | ND | --- | 31 | 31 | 7 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-102B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.25 | 0.8 | 33 | 0.36 | 0.87 | 56 | 0.59 | 1.19 | 60 |
| MW-103S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 3.7 | 3.7 | 4 | ND | ND | --- | 0.53 | 0.53 | 4 | 0.37 | 2.1 | 16 |
| MW-103B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.22 | 0.25 | 13 |
| MW-104S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-104B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-101I | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-105S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-105B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-106S | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.47 | 0.47 | 7 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-108B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-109S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-110I | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.35 | 0.35 | 17 | 0.53 | 0.78 | 80 |
| MW-111S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.79 | 0.79 | 4 | 0.76 | 2.2 | 7 | 0.24 | 3 | 15 |
| MW-111B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.29 | 0.7 | 36 |
| MW-111I | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.53 | 1.02 | 67 |
| MW-112S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.38 | 0.38 | 7 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-112B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.79 | 0.79 | 4 | 0.76 | 2.2 | 7 | 0.24 | 3 | 16 |
| MW-113S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-113B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-115S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.24 | 0.24 | 4 | 0.37 | 0.53 | 7 | 0.59 | 0.59 | 4 |
| MW-115B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-117S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-117B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-118S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-120S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.26 | 0.26 | 7 | 0.29 | 0.33 | 15 |
| MW-120B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 3.41 | 18 | 33 | ND | ND | --- | ND | ND | --- | 0.37 | 0.78 | 67 |
| S-3 | 0.54 | 0.54 | 6 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 0.5 | 0.91 | 17.647059 | 0.52 | 2.3 | 55 | 0.55 | 3.1 | 76 |
| Number of Wells with Detections | 4 | | | 2 | | | 4 | | | 1 | | | 1 | | | 4 | | | 8 | | | 14 | | | 18 | | |
| Percent of Wells with Detections | 11 | | | 5 | | | 11 | | | 3 | | | 3 | | | 11 | | | 22 | | | 38 | | | 49 | | |
| Maximum Observed Concentration | 1.34 | | | 57.3 | | | 33.3 | | | 0.47 | | | 0.38 | | | 27.8 | | | 0.91 | | | 16 | | | 14 | | |
| Date of Maximum Concentration Detected | 11/6/2003 | | | 11/6/2003 | | | 11/6/2003 | | | 11/4/2003 | | | 10/17/2007 | | | 6/17/2004 | | | 6/15/2004 | | | 10/18/2007 | | | 11/6/2003 | | |

Notes:
All concentrations reported in ug/L
ROD Cleanup - background concentration from Record of Decision (ROD)
ND - Non Detect
Min - Minimum
Max - Maximum
% Detect - Percent Detected in well
MCL - USEPA Maximum Contaminant Level for drinking water
NC - No Concentration Set

Table 8
Summary of Chemicals of Concern Analtyical Results - 2003 to 2008
VOCs and SVOCs in Groundwater

Barkhamsted - New Hartford Landfill

| **VOC of Concern** | **Chloroethane** | | | **Methylene Chloride** | | | **Toluene** | | | **Trichloroethene** | | | **Vinyl chloride** | | | **Bis(2-ethylhexyl)phthalate** | | | **2,4-Dimethylphenol** | | | **3 & 4 Methylphenol** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ROD Cleanup (ug/L)** | **1** | | | **2** | | | **0.5** | | | **0.5** | | | **1** | | | **2** | | | **10** | | | **10** | | |
| **MCL (ug/L)** | **NC** | | | **5** | | | **1000** | | | **5** | | | **2** | | | **6** | | | **NC** | | | **NC** | | |
| **Well ID** | **Min** | **Max** | **%Detect** | **Min** | **Max** | **%Detect** | **Min** | **Max** | **%Detect** | **Min** | **Max** | **%Detect** | **Min** | **Max** | **%Detect** | **Min** | **Max** | **%Detect** | **Min** | **Max** | **%Detect** | **Min** | **Max** | **%Detect** |
| MW-1S | 2.8 | 9.17 | 53 | 0.21 | 3.2 | 13 | 5.1 | 12 | 87 | ND | ND | --- | ND | ND | --- | 3.6 | 12.4 | 20 | 140 | 895 | 93 | ND | ND | --- |
| MW-4S | 0.88 | 7.45 | 50 | 0.2 | 0.26 | 20 | 1.41 | 4.38 | 40 | ND | ND | --- | ND | ND | --- | 4 | 4 | 10 | 6.4 | 6.4 | 10 | ND | ND | --- |
| MW-4R | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 3.4 | 3.4 | 100 | ND | ND | --- |
| MW-5S | 1.3 | 4.5 | 56 | ND | ND | --- | 0.5 | 15.4 | 38 | ND | ND | --- | ND | ND | --- | ND | ND | --- | 3.7 | 21.1 | 44 | ND | ND | --- |
| MW-5B | 0.65 | 0.87 | 14 | ND | ND | --- | ND | ND | --- | 0.53 | 0.82 | 57 | 0.23 | 0.41 | 14 | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-101S | 3.34 | 3.34 | 8 | 1.16 | 1.16 | 8 | 31 | 12000 | 100 | ND | ND | --- | ND | ND | --- | 5.4 | 13.1 | 15 | 19 | 1300 | 85 | 63.1 | 130 | 23 |
| MW-101B | 1.37 | 3.1 | 12 | 0.29 | 0.29 | 4 | 0.49 | 55 | 20 | 1.72 | 3.29 | 8 | ND | ND | --- | 14.4 | 14.4 | 4 | 2.6 | 1000 | 25 | ND | ND | --- |
| MW-101I | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 9.2 | 9.2 | 20 | ND | ND | --- | ND | ND | --- |
| MW-101D | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-102S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 11.4 | 11.4 | 7 | ND | ND | --- | ND | ND | --- |
| MW-102B | 1 | 2.5 | 60 | 0.4 | 0.44 | 27 | 1 | 1 | 7 | 1 | 1 | 7 | 2 | 2 | 7 | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-103S | 1.37 | 3.1 | 12 | 0.29 | 0.29 | 4 | 1.1 | 1.1 | 4 | 1.72 | 3.29 | 8 | ND | ND | --- | 9.7 | 14.4 | 8 | ND | ND | --- | ND | ND | --- |
| MW-103B | ND | ND | --- | 0.6 | 0.62 | 13 | ND | ND | --- | ND | ND | --- | ND | ND | --- | 3.7 | 16.3 | 20 | ND | ND | --- | ND | ND | --- |
| MW-104S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-104B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 3.8 | 13 | 36 | ND | ND | --- | ND | ND | --- |
| MW-101I | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 9.2 | 9.2 | 20 | ND | ND | --- | ND | ND | --- |
| MW-105S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-105B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 4.1 | 4.1 | 100 | ND | ND | --- | ND | ND | --- |
| MW-106S | ND | ND | --- | ND | ND | --- | 0.82 | 0.82 | 7 | ND | ND | --- | ND | ND | --- | 7.1 | 7.1 | 7 | ND | ND | --- | ND | ND | --- |
| MW-108B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 8.6 | 8.6 | 100 | ND | ND | --- | ND | ND | --- |
| MW-109S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-110I | 0.76 | 1.17 | 40 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 7.3 | 7.3 | 20 | ND | ND | --- | ND | ND | --- |
| MW-111S | 0.83 | 4 | 12 | 0.58 | 0.58 | 4 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-111B | 0.88 | 3.1 | 57 | ND | ND | --- | ND | ND | --- | 0.39 | 1.6 | 71 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-111I | 1.4 | 4.29 | 100 | 0.29 | 0.29 | 33 | ND | ND | --- | 0.62 | 0.88 | 67 | ND | ND | --- | 17.2 | 17.2 | 17 | ND | ND | --- | ND | ND | --- |
| MW-112S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 6.8 | 6.8 | 7 | ND | ND | --- | ND | ND | --- |
| MW-112B | 0.83 | 4 | 12 | 0.58 | 0.58 | 4 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-113S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-113B | ND | ND | --- | ND | ND | --- | 0.78 | 5.6 | 15 | ND | ND | --- | ND | ND | --- | 3.3 | 17 | 46 | ND | ND | --- | 36 | 36 | 8 |
| MW-115S | 1.6 | 1.6 | 4 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 7.6 | 7.6 | 4 | ND | ND | --- | ND | ND | --- |
| MW-115B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 6.6 | 11 | 14 | ND | ND | --- | 180 | 180 | 7 |
| MW-117S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 21.4 | 21.4 | 100 | ND | ND | --- | ND | ND | --- |
| MW-117B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | 118 | 118 | 100 | ND | ND | --- | ND | ND | --- |
| MW-118S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-120S | 0.78 | 0.84 | 15 | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-120B | 0.89 | 2.1 | 67 | 0.28 | 0.39 | 17 | ND | ND | --- | 0.67 | 3.35 | 100 | ND | ND | --- | 5.8 | 5.8 | 8 | ND | ND | --- | ND | ND | --- |
| S-3 | 1.2 | 4.1 | 53 | ND | ND | --- | 0.24 | 0.6 | 18 | ND | ND | --- | ND | ND | --- | ND | ND | --- | 11 | 11 | 6 | ND | ND | --- |
| **Number of Wells with Detections** | **17** | | | **11** | | | **10** | | | **7** | | | **2** | | | **22** | | | **7** | | | **3** | | |
| **Percent of Wells with Detections** | **46** | | | **30** | | | **27** | | | **19** | | | **5** | | | **59** | | | **19** | | | **8** | | |
| **Maximum Observed Concentration** | **9.17** | | | **3.2** | | | **12000** | | | **3.35** | | | **2** | | | **118** | | | **1300** | | | **180** | | |
| **Date of Maximum Concentration Detected** | **8/12/2003** | | | **10/31/2006** | | | **5/7/2003** | | | **8/14/2003** | | | **8/14/2003** | | | **8/13/2003** | | | **4/20/2005** | | | **11/6/2003** | | |

Notes:
All concentrations reported in ug/L
ROD Cleanup - background concentration from Record of Decision (ROD)
ND - Non Detect
Min - Minimum
Max - Maximum
% Detect - Percent Detected in well
MCL - USEPA Maximum Contaminant Level for drinking water
NC - No Concentration Set

Table 9
Summary of Chemicals of Concern Analytical Results - 2003 to 2008
Metals in Groundwater

Barkhamsted - New Hartford Landfill

| VOC of Concern | Lead | | | Arsenic | | | Chromium | | | Manganese | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROD Cleanup (ug/L) | 3 | | | 5 | | | 50 | | | 50 | | |
| MCL (ug/L) | 15 | | | 10 | | | 100 | | | NC | | |
| Well ID | Min | Max | %Detect | Min | Max | %Detect | Min | Max | %Detect | Min | Max | %Detect |
| MW-1S | 0.97 | 41 | 40 | 7.7 | 24 | 93 | 1.6 | 12 | 60 | 48 | 80 | 100 |
| MW-4S | 1.4 | 7.8 | 40 | 7.6 | 26 | 100 | 0.7 | 2.9 | 60 | 770 | 6550 | 100 |
| MW-4R | 2.1 | 2.1 | 100 | 7 | 7 | 100 | 1.1 | 1.1 | 100 | 4600 | 4600 | 100 |
| MW-5S | 0.46 | 6 | 25 | 38 | 38 | 6 | 0.53 | 1.7 | 25 | 560 | 1900 | 100 |
| MW-5B | 0.51 | 3.1 | 36 | 2.3 | 21 | 21 | 0.74 | 2.9 | 36 | 320 | 3540 | 100 |
| MW-101S | 0.66 | 6.5 | 31 | 2.8 | 17 | 92 | 2.2 | 6.7 | 54 | 73 | 6400 | 100 |
| MW-101B | 0.92 | 11 | 25 | 3 | 12 | 21 | 0.73 | 4.2 | 46 | 2.6 | 6100 | 88 |
| MW-101I | 1.2 | 1.4 | 40 | 38 | 38 | 20 | 0.94 | 1.2 | 40 | 25 | 150 | 100 |
| MW-101D | 9 | 9 | 100 | ND | ND | --- | ND | ND | --- | 510 | 510 | 100 |
| MW-102S | 0.77 | 5 | 21 | 14 | 19 | 14 | 0.7 | 3.2 | 43 | 3.6 | 290 | 79 |
| MW-102B | 1.2 | 2.9 | 36 | 2.3 | 35 | 14 | 0.5 | 3.4 | 29 | 49 | 580 | 100 |
| MW-103S | 0.97 | 3.2 | 25 | 3 | 12 | 13 | 0.73 | 10 | 50 | 2.6 | 5300 | 79 |
| MW-103B | 0.58 | 5.5 | 33 | ND | ND | --- | 0.5 | 4.1 | 60 | 27 | 230 | 100 |
| MW-104S | 1.1 | 1.3 | 18 | ND | ND | --- | 1 | 1.9 | 64 | 7.4 | 310 | 100 |
| MW-104B | 1 | 6.3 | 50 | ND | ND | --- | 0.6 | 3.6 | 64 | 11 | 100 | 82 |
| MW-101I | 1.2 | 1.4 | 40 | 38 | 38 | 20 | 0.94 | 1.2 | 40 | 25 | 150 | 100 |
| MW-105S | ND | ND | --- | ND | ND | --- | ND | ND | --- | 40 | 40 | 100 |
| MW-105B | ND | ND | --- | ND | ND | --- | ND | ND | --- | 20 | 20 | 100 |
| MW-106S | 0.91 | 2 | 14 | 4.6 | 4.6 | 7 | 0.69 | 2.9 | 50 | 34 | 510 | 100 |
| MW-108B | ND | ND | --- | ND | ND | --- | ND | ND | --- | 40 | 40 | 100 |
| MW-109S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-110I | 1.2 | 15 | 80 | 33 | 33 | 20 | 3 | 3.7 | 40 | 4200 | 5100 | 100 |
| MW-111S | 0.62 | 2.5 | 24 | 5 | 40 | 12 | 0.71 | 5.1 | 48 | 3.2 | 3700 | 84 |
| MW-111B | 0.7 | 4 | 29 | 1.3 | 1.3 | 7 | 0.6 | 3 | 50 | 14 | 77 | 100 |
| MW-111I | 0.95 | 0.95 | 17 | 17 | 17 | 17 | 0.76 | 1.4 | 33 | 4.1 | 18 | 50 |
| MW-112S | 0.38 | 4 | 29 | 4 | 4 | 7 | 2 | 19 | 57 | 7.5 | 190 | 86 |
| MW-112B | 0.74 | 2.5 | 17 | 5 | 10 | 13 | 0.79 | 6.6 | 54 | 3.3 | 3700 | 71 |
| MW-113S | 0.53 | 5 | 29 | ND | ND | --- | 0.89 | 1.6 | 57 | 1.1 | 20 | 64 |
| MW-113B | 1.3 | 2.6 | 31 | 5.6 | 5.6 | 8 | 1 | 4.6 | 46 | 5.8 | 40 | 77 |
| MW-115S | 0.91 | 3 | 23 | 5.9 | 24 | 8 | 0.6 | 3.8 | 50 | 4.4 | 400 | 77 |
| MW-115B | 0.99 | 5 | 36 | 10 | 12 | 21 | 1.1 | 3 | 57 | 10 | 130 | 100 |
| MW-117S | ND | ND | --- | ND | ND | --- | ND | ND | --- | 740 | 740 | 100 |
| MW-117B | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-118S | ND | ND | --- | ND | ND | --- | ND | ND | --- | ND | ND | --- |
| MW-120S | 0.51 | 3.2 | 38 | 5.6 | 5.6 | 8 | 0.6 | 2.8 | 54 | 810 | 3300 | 100 |
| MW-120B | 0.46 | 2 | 25 | 1.9 | 11 | 25 | 0.55 | 3 | 42 | 61 | 470 | 92 |
| S-3 | 0.41 | 3 | 18 | 9.7 | 10 | 12 | 0.52 | 2.6 | 35 | 640 | 3900 | 100 |
| **Number of Wells with Detections** | **30** | | | **25** | | | **29** | | | **34** | | |
| **Percent of Wells with Detections** | **81** | | | **68** | | | **78** | | | **92** | | |
| **Maximum Observed Concentration** | **41** | | | **40** | | | **19** | | | **6550** | | |
| **Date of Maximum Concentration Detected** | **11/4/2003** | | | **4/20/2006** | | | **11/1/2006** | | | **8/12/2003** | | |

Notes:
All concentrations reported in ug/L
ROD Cleanup - background concentration from Record of Decision (ROD)
ND - Non Detect
Min - Minimum
Max - Maximum
% Detect - Percent Detected in well
MCL - USEPA Maximum Contaminant Level for drinking water
NC - No Concentration Set

## Table 10
## Changes in Cancer Toxicity Data

**Pathway: Ingestion, Dermal**

| Chemical of Concern | Oral Cancer Slope Factor in ROD | Current Applicable Oral Cancer Slope Factor | Slope Factor Units | Weight of Evidence/Cancer Guideline Description | Source | Date of Change (MM/DD/YY) |
|---|---|---|---|---|---|---|
| Arsenic | 1.5 | same | $[(mg/kg)/day]^{-1}$ | A | IRIS | -- |
| 1,4-Dichlorobenzene | .024 | **none** | $[(mg/kg)/day]^{-1}$ | **D** | **IRIS** | **08/05/08** |
| Benzene | .029 | **0.055** | $[(mg/kg)/day]^{-1}$ | A | IRIS | 08/05/08 |
| 1,2-Dichloroethane | .091 | same | $[(mg/kg)/day]^{-1}$ | B2 | IRIS | -- |
| 1,2-Dichloropropane | .068 | same | $[(mg/kg)/day]^{-1}$ | B2 | **NCEA** | **10/14/04** |
| Chloroethane | .0029 | same | $[(mg/kg)/day]^{-1}$ | B2 | **NCEA** | **10/14/04** |
| Chloroform | .0061 | **0.01** | $[(mg/kg)/day]^{-1}$ | B2 | IRIS | 08/05/08 |
| Chloromethane | .013 | **none** | $[(mg/kg)/day]^{-1}$ | **D** | **IRIS** | **08/05/08** |
| Dibromochloromethane | .084 | same | $[(mg/kg)/day]^{-1}$ | C | IRIS | -- |
| Methylene chloride | .0075 | same | $[(mg/kg)/day]^{-1}$ | B2 | IRIS | -- |
| Trichloroethene | .011 | **0.4** | $[(mg/kg)/day]^{-1}$ | B1 | **NCEA** | **10/14/04** |
| Vinyl chloride | 1.9 | **1.5** | $[(mg/kg)/day]^{-1}$ | A | IRIS | 08/05/08 |
| Bis(2-ethyl hexyl) phthalate | .014 | same | $[(mg/kg)/day]^{-1}$ | B2 | IRIS | -- |

**Key**
Toxicity data as reviewed on 8/5/08
Changes since Record of Decision shown in **boldface**, applicable dates noted where known
--: Not applicable or no information available
IRIS: Integrated Risk Information System, U.S. EPA
NCEA: National Center for Environmental Assessment

**USEPA GROUP:**
A - Human Carcinogen
B2 - Probable human carcinogen – Indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen

## Summary of Toxicity Assessment

This table provides carcinogenic risk information that is relevant to the contaminants of concern in groundwater. At the time of writing the risk assessment, slope factors were not available for the dermal route of exposure. Thus, the dermal slope factors used in the assessment were extrapolated from oral values. An adjustment factor is sometimes applied, and is dependent upon how well the chemical is absorbed via the oral route. Adjustments are particularly important for chemicals with less than 50% absorption via the ingestion route. However, adjustment is not necessary for the chemicals evaluated at this Site. Therefore, the same values presented above were used as the dermal carcinogenic slope factors for these contaminants.

## Table 11
## Changes in Non-Cancer Toxicity Data

**Pathway: Ingestion, Dermal**

| Chemical of Concern | Oral RfD Value in ROD | Current Applicable Oral RfD Value | Oral RfD Units | Primary Target Organ | Combined Uncertainty/ Modifying Factors | Source | Date of Change (MM/DD/YY) |
|---|---|---|---|---|---|---|---|
| Arsenic | 0.0003 | same | mg-kg/day | Skin | 3 | IRIS | -- |
| Chromium | 0.003 (Cr VI) | same | mg-kg/day | -- | 900 | IRIS | -- |
| Manganese | 0.024 | **0.046** | mg-kg/day | CNS | 1 | IRIS | 08/05/08 |
| Acetone | 0.1 | **0.9** | mg-kg/day | Liver/Kidney | 1000 | IRIS | 08/05/08 |
| Benzene | 0.003 | **0.0004** | mg-kg/day | -- | **300** | **IRIS** | 08/05/08 |
| 2-Butanone | 0.6 | same | mg-kg/day | Developmental | 1000 | IRIS | -- |
| 1,2-Dichloroethane | 0.03 | **none** | mg-kg/day | -- | **--** | **IRIS** | 08/05/08 |
| 1,2-Dichloropropane | 0.0011 | **none** | mg-kg/day | -- | -- | IRIS | 08/05/08 |
| Chloroethane | 0.4 | **none** | mg-kg/day | -- | **--** | **NCEA** | 10/14/04 |
| Chloroform | 0.01 | same | mg-kg/day | Liver | 1000 | IRIS | -- |
| Dibromochloromethane | 0.02 | same | mg-kg/day | Kidney | 1000 | IRIS | -- |
| 4-Methyl-2-pentanone | 0.08 | same | mg-kg/day | Liver/Kidney | 3000 | **NCEA** | 10/14/04 |
| Methylene chloride | 0.06 | same | mg-kg/day | Liver | 100 | IRIS | -- |
| Toluene | 0.2 | **0.08** | mg-kg/day | Liver/Kidney | **3000** | IRIS | 08/05/08 |
| Trichloroethene | 0.006 | **0.0003** | mg-kg/day | Liver/Kidney | 3000 | **NCEA** | 10/14/04 |
| bis(2-Ethylhexyl)-phthalate | 0.02 | same | mg-kg/day | Liver | 1000 | IRIS | -- |
| 1,4-Dichlorobenzene | 0.03 | **same** | mg-kg/day | -- | **--** | **IRIS** | 08/05/08 |
| 2,4-Dimethylphenol | 0.02 | same | mg-kg/day | Blood | 3000 | IRIS | -- |
| 4-Methylphenol | 0.005 | same | mg-kg/day | CNS | 1000 | **NCEA** | 10/14/04 |
| Vinyl chloride | none | **0.003** | mg-kg/day | Liver | 30 | **IRIS** | 08/05/08 |

| | |
|---|---|
| **Key:**<br>Toxicity data as reviewed on 8/5/08<br>Changes since Record of Decision shown in **boldface**, effective dates noted where known.<br>--: Not applicable or no information available<br>IRIS: Integrated Risk Information System, U.S. EPA<br>NCEA: National Center for Environmental Assessment | |

## Summary of Toxicity Assessment

This table provides non-carcinogenic risk information that is relevant to the contaminants of concern in groundwater. **All** of the COCs have toxicity data, indicating their potential for adverse non-carcinogenic health effects in humans. All RfD's are based on chronic toxicity. Dermal RfD values used in the risk assessment were extrapolated from oral values.

**TABLE 12**
**RECOMMENDED CHANGES TO SAMPLING LOCATIONS, RATIONALE AND FREQUENCY**

| Sample Location | Frequency | MNA Monitoring Type | Analytical Parameters | Initial Rationale | Revised Rationale for 2008 |
|---|---|---|---|---|---|
| **Groundwater Monitoring Wells** | | | | | |
| S-3 | Semi-Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Well is located in the vicinity of the eastern edge of the overburden ground water plume. | No change. |
| MW-1S* | Semi-Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Well is located in the vicinity of the upgradient portion of the overburden plume. | No change. |
| MW-4S | Semi-Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Well is located in central portion of overburden plume. | No change. |
| MW-4R | Semi-Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Well is located at western edge of shallow bedrock plume. | Obstructed at 12 feet since start, but pulled out tubing April 2008. |
| MW-5S*<br>MW-5B* | Semi-Annual | Performance | **MNA Parameters**,<br>VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are located at western edge of overburden and shallow bedrock plumes. | No change. |

**TABLE 12**
**RECOMMENDED CHANGES TO SAMPLING LOCATIONS, RATIONALE AND FREQUENCY**

| Sample Location | Frequency | MNA Monitoring Type | Analytical Parameters | Initial Rationale | Revised Rationale for 2008 |
|---|---|---|---|---|---|
| **Groundwater Monitoring Wells** | | | | | |
| MW-101S*<br>MW-101B* | Semi-Annual | Performance | **MNA Parameters**,<br>VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are located at the western edge of overburden and shallow bedrock plumes. | No change. |
| MW-101I<br>MW-101D | Annual to not sampled | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Ground water in intermediate and deep bedrock zones not impacted; monitor for vertical migration. | Remove wells. MW- 101D is not in plume (below it) and MW-101I is just below plume and vertical impact was not noted. MW101B can be indicator for vertical migration. |
| MW-102S* | Semi-Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Ground water in overburden not impacted at this location. Well to monitor potential plume migration in eastern direction. | No change. |
| MW-102B* | Semi-Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Well is located at eastern edge of shallow bedrock plume. | No change. |
| MW-103S* | Semi-Annual to annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Well is located at eastern edge of overburden plume. | Change to annual as ND since 2003. |
| MW-103B* | Semi-Annual to annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Well is located near the center of the shallow bedrock plume. | Change to annual as ND since 2003. |

**TABLE 12**
**RECOMMENDED CHANGES TO SAMPLING LOCATIONS, RATIONALE AND FREQUENCY**

| Sample Location | Frequency | MNA Monitoring Type | Analytical Parameters | Initial Rationale | Revised Rationale for 2008 |
|---|---|---|---|---|---|
| **Groundwater Monitoring Wells** | | | | | |
| MW-104S | Semi-Annual to Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are approx. 225 ft northwest of overburden and shallow bedrock plumes. Wells to monitor plume migration in northern direction. | Changed frequency to annual. No affects to wells. |
| MW-104B | Semi-Annual to Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are approx. 225 ft northwest of overburden and shallow bedrock plumes. Wells to monitor plume migration in northern direction. | Changed frequency to annual. No affects to wells. |
| MW-104I | Annual to not sampled | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are approx. 225 ft northwest of overburden and shallow bedrock plumes. Wells to monitor plume migration in northern direction. | Remove from sampling as the S and B wells are adequate. Well also obstructed since 2004. |
| MW-106S* | Semi-Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Well is located upgradient, southwest of overburden plume. Well to monitor plume migration in western direction. | No change. |
| MW-110I | Annual to not sampled | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Well is located at the northeastern edge of the landfill cap. | Remove from sampling as historically ND and nearby coverage with S-3 and MW102. |
| MW-111S* | Semi-Annual | Detection | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are located at downgradient edge of overburden and shallow bedrock plumes. Wells to monitor plume migration in northeastern direction. | Change by removing the MNA parameters from MW-111S and adding them to MW-111I as plume is diving deeper and no significant shallow affects. |
| MW-111B* | Semi-Annual | Detection | **MNA Parameters**,<br>VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are located at downgradient edge of overburden and shallow bedrock plumes. Wells to monitor plume migration in northeastern direction. | Change by removing the MNA parameters from MW-111S and adding them to MW-111I as plume is diving deeper and no significant shallow affects. |
| MW-111I | Annual to Semi-Annual | Detection | **MNA Parameters**,<br>VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are located at downgradient edge of overburden and shallow bedrock plumes. Wells to monitor plume migration in northeastern direction. | Add MNA sampling as noted above and increase frequency from annual to semi-annual. |

**TABLE 12**
**RECOMMENDED CHANGES TO SAMPLING LOCATIONS, RATIONALE AND FREQUENCY**

| Sample Location | Frequency | MNA Monitoring Type | Analytical Parameters | Initial Rationale | Revised Rationale for 2008 |
|---|---|---|---|---|---|
| **Groundwater Monitoring Wells** | | | | | |
| MW-112S | Semi-Annual to Annual | Ambient | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are located upgradient, south of plume, and represent background data. | Change MW-112S to annual.<br>Remove? |
| MW-112B | Semi-Annual to not sampled | | | | Remove MW-112B from sampling. |
| MW-113S* | Semi-Annually | Ambient | **MNA Parameters**,<br>VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are located upgradient, south of plume, and represent background data. | No change. |
| MW-113B* | | | | | |
| MW-113I | Annual to not sampled | Ambient | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators, | | Obstructed at 1.5 ft since start, remove from sampling. |
| MW-113D | | | | | Obstructed by pump left by others since start, remove from sampling. |
| MW-115S* | Semi-Annual | Ambient | VOCs,<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Wells are located southeast of plume, and represent background data. | No change. Wells also sentinel for residences along New Hartford Road. |
| MW-115B* | | | | | |
| MW-120S | Semi-Annual to Annual | Detection or Performance | **MNA Parameters**,<br>VOCs,<br>SVOCs,<br>Metals – Total,<br>Landfill leachate indicators | Location To Be Determined, likely between MW-5 and MW-117. | Change to annual as cleaning up. |
| MW-120B<br>(new wells) | Semi-Annual | | | | No change. |

**TABLE 12**
**RECOMMENDED CHANGES TO SAMPLING LOCATIONS, RATIONALE AND FREQUENCY**

| Sample Location | Frequency | MNA Monitoring Type | Analytical Parameters | Rationale |
|---|---|---|---|---|
| **Surface Water (no change)** | | | | |
| SW-3*<br>SW-16*<br>SW-9* | Semi-Annual | N/A | VOCs<br>SVOCs<br>Metals – Total<br>Hardness<br>Pesticides<br>Landfill leachate indicators | Surface water samples will be obtained at locations where groundwater is discharging to surface water. Sample locations will correspond to locations sampled previously, using the existing designations for those locations |
| **Sediment (no change)** | | | | |
| SED-3<br>SED-16<br>SED-9 | Annual | N/A | VOCs<br>Metals - Total,<br>SVOCs<br>PCBs<br>Pesticides | Sediment samples will be collected in areas underlying surface water sampling points. |
| **Potable Water (Residences – no change)** | | | | |
| DW-1*<br>DW-2*<br>DW-3* | Semi-Annual | N/A | VOCs,<br>Acetone,<br>MEK<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Potable water wells are located at residential/commercial properties |
| **Seeps (no change)** | | | | |
| S6*<br>S3*<br>S1* | Semi-Annual | N/A | VOCs,<br>SVOCs,<br>Metals - Total,<br>Total sulfate<br>Pesticides | Seep sample locations will correspond to locations sampled previously, using the existing designations for those locations |

Notes:
1. * denotes sample locations specified by the OMM Plan (CTDEP) for the landfill.
2. N/A = not applicable.
3. Groundwater samples will be collected from different depths based on the well identification as follows:
S = overburden well, B or R = shallow bedrock, I = intermediate bedrock, D = deep bedrock.
4. Landfill leachate indicators (per Landfill OMM and amendments) include: alkalinity, ammonia, chemical oxygen demand (COD), chloride, nitrate, total dissolved solids (TDS), total suspended solids (TSS), specific conductivity, hardness, pH and total sulfate.

**TABLE 12**
**RECOMMENDED CHANGES TO SAMPLING LOCATIONS, RATIONALE AND FREQUENCY**

| Sample Location | Frequency | MNA Monitoring Type | Analytical Parameters | Rationale |
|---|---|---|---|---|
| **Surface Water (no change)** | | | | |
| SW-3*<br>SW-16*<br>SW-9* | Semi-Annual | N/A | VOCs<br>SVOCs<br>Metals – Total<br>Hardness<br>Pesticides<br>Landfill leachate indicators | Surface water samples will be obtained at locations where groundwater is discharging to surface water. Sample locations will correspond to locations sampled previously, using the existing designations for those locations |
| **Sediment (no change)** | | | | |
| SED-3<br>SED-16<br>SED-9 | Annual | N/A | VOCs<br>Metals - Total,<br>SVOCs<br>PCBs<br>Pesticides | Sediment samples will be collected in areas underlying surface water sampling points. |
| **Potable Water (Residences – no change)** | | | | |
| DW-1*<br>DW-2*<br>DW-3* | Semi-Annual | N/A | VOCs,<br>Acetone,<br>MEK<br>SVOCs,<br>Metals - Total,<br>Landfill leachate indicators | Potable water wells are located at residential/commercial properties |
| **Seeps (no change)** | | | | |
| S6*<br>S3*<br>S1* | Semi-Annual | N/A | VOCs,<br>SVOCs,<br>Metals - Total,<br>Total sulfate<br>Pesticides | Seep sample locations will correspond to locations sampled previously, using the existing designations for those locations |

Notes:
1. * denotes sample locations specified by the OMM Plan (CTDEP) for the landfill.
2. N/A = not applicable.
3. Groundwater samples will be collected from different depths based on the well identification as follows: S = overburden well, B or R = shallow bedrock, I = intermediate bedrock, D = deep bedrock.
4. Landfill leachate indicators (per Landfill OMM and amendments) include: alkalinity, ammonia, chemical oxygen demand (COD), chloride, nitrate, total dissolved solids (TDS), total suspended solids (TSS), specific conductivity, hardness, pH and total sulfate.